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Part First.

ORIGINAL COMMUNICATIONS.

I.—CLINICAL LECTURE ON THE TREATMENT OF ACUTE BRONCHITIS.

By **Claud Muirhead**, M.D., F.R.C.P. Ed., Physician to the Royal Infirmary, and Lecturer on Clinical Medicine in the Extra-Mural School of Medicine, Edinburgh.

Gentlemen,—I purpose to invite your attention to-day to the consideration of the best and most appropriate means of combating that very common, and at times dangerous, disorder of the air-passages included under the term Bronchitis. I shall not occupy your time by detailing the symptoms or discussing the ætiology of an affection of which we have so constantly examples brought under our notice in this unstable climate of ours, with its ever-changing vicissitudes of temperature and moisture.

Assuming, then, that we are called to treat an adult patient with all the evidences of an acute bronchitis—a man who is somewhat feverish, with quickened, rather feeble, pulse; difficult, hurried, and somewhat noisy respiration, frequent dry cough, and pain under the sternum—how are we to proceed to relieve him? Evidently the first thing to be done is to confine him to bed, in a room whose temperature ranges about 65° F., and whose atmosphere is moist. In this way we remove him from the causes which tend to keep up the inflammation and irritate the hyperæmic mucous membrane of the bronchi.

One of the most convenient methods of rendering the air of the bedroom moist is by using the bronchitis-kettle. This apparatus can easily be approached near the patient's bed, and the moisture thereby generated confined near him, by erecting a temporary curtain over the head of the bed. If this be not at hand, the air of the room can very readily be rendered sufficiently moist by filling a foot-pail with boiling water, and plunging into it a brick, previously heated in the fire, by which means a large amount of steam is quickly disengaged, and this can be repeated when necessary. How grateful this moist, warm air is to the swollen, dry, irritable membrane of the bronchitic, only he who has actually experienced it can fully comprehend. On the whole, this method of breathing warm, moist air is preferable to the use of the small inhaler, which is usually too fatiguing to the invalid, and is quickly laid aside after one or two applications. At the same time, if it be desired to use medicated steam, such as conium vapour, this latter method will be the one to employ.

The patient also makes complaint of a feeling of rawness, tightness, constriction, or actual pain beneath the sternum. Nothing so promptly relieves this, or affords so much comfort in the way of mitigating this sensation, as warm poultices, frequently applied to the front of the chest. But keep in mind this essential point, that the poultice must not be too heavy, otherwise the weight oppresses the patient, and he will quickly discard it as a fatigue and embarrassment to his respiration. You will much longer retain the heat of the poultice, and thus dispense with too frequent changing, by well covering it with mackintosh. Occasionally, in the bronchitis of children, it may be necessary to envelop the whole chest in what is called a "jacket poultice." Now, to young children this is always a source of misery and great repugnance, and the frequent changing is of itself a weariness and distress to both nurse and patient. You may readily attain the same object by substituting for the poultice two folds of lint, shaped to fit the body, well rung out of hot water, and accurately covered with mackintosh, the whole being stitched round the chest; or instead of the lint you may use a thick layer of dry, medicated cotton-wool, and cover this with mackintosh, securing it in position by a thin gauze bandage. In this way you get rid of the necessity of frequently changing the poultices, and of course of the risk of the child's perspiring skin being chilled in the process, and thus aggravating the disease.

As some of you already know, I have for years abandoned the use of poultices as a local treatment in Pneumonia, for the reason already stated. I prefer to well redden the skin by the application of a turpentine stupe, and then to envelop the whole chest in a jacket of medicated cotton-wool, stitched inside of flannel, and fastened in front by tapes. If at any time it be necessary to re-apply the counter-irritant, this can readily be done without removing the jacket, by simply unfastening the tapes and slipping up a mustard leaf or the turpentine stupe, keeping it on the requisite time, and readjusting the jacket when it is removed. I commend this method of counter-irritation to your attention. It is vastly less fatiguing to the patient, and infinitely more grateful. He will need two such jackets, as in consequence of the free perspiration thereby induced, you will find it necessary to change the jacket morning and evening.

Let me just remind you that you must be very careful in the use of counter-irritants, such as mustard, to the delicate skin of young children. Probably a piece of flannel passed through mustard-water (one dessert-spoonful of mustard to a breakfast-cupful of tepid water), will be found amply sufficient to well redden the tender skin of an infant.

And now as to the therapeutic remedies. First in importance come the *sedative or nauseating expectorants.* All this class of remedies increase the bronchial secretion by virtue of their nauseating property. This action is very similar to the effect which they produce upon the skin. Of course, to produce their fullest therapeutic influence they must be given in dose sufficient to produce vomiting. But, while in certain cases—as in severe capillary bronchitis—we purposely seek to induce this effect, as a rule the drug is given in quantity sufficient to induce nausea short of emesis. To this class belong antimony, ipecacuanha, and lobelia.

Antimony.—This old-fashioned and somewhat despised remedy is of greatest use in the acute form of bronchitis, and in the first stage of it, before secretion has formed, and when the mucous membrane is dry, inflamed and swollen, and the cough is frequent, painful, and resultless. It promotes secretion, and is said to transform the scanty secretion which is beginning to form, and which is poor in cells, into a more abundant loose secretion, rich in cells. Further, it diminishes fever by promoting diaphoresis, and hastens the elimination of inflammatory products. But, so soon as secretion is fairly established, then it must be stopped. It has fulfilled all that it was intended to accomplish, for it forms no part of our plan of treatment to use it as a depressent.

The most convenient form in which to use this anti-catarrhal remedy is probably the wine, which contains two grains of the Tartrate to the ounce of Sherry—♏xv. are thus equivalent to gr. $\frac{1}{16}$. The dose should be small, probably not more than ♏xv. But it should be frequently repeated, say every three hours.

If the cough be very harassing, frequent, irritable, dry, and hoarse, then this drug will find its greatest use. And in the case of an adult its value will be greatly heightened by combining with it an equally small, or even smaller, dose of Morphia, say gr. $\frac{1}{24}$ of Muriate of Morphia—equivalent to ♏v. of the Liquor Morphiæ Hydrochloratis. Frequently I find two or three drops of the Liquor Opii Sedativus preferable. Of course, I need not tell you that this addition is wholly inadmissible in the case of children.

Let me say, in passing, that there frequently arises during the course of a protracted case of Phthisis a condition not unlike this, where the use of Antimony will prove of the utmost service. To all appearance a limited pneumonic attack has supervened; the temperature has run up perhaps a couple of degrees; the skin, previously bathed in perspiration, is now dry, parched, it may be pungently hot; and the cough continuous, dry, and most distressing to the exhausted patient, who is irritable and worn out, yet sleepless. Interrupt the use of the medicine he has been using, and give the Antimonial wine with the Opium, and after a few doses you will often observe a magical change come over the patient, and he will pass into a condition of comparative comfort and peace to which he has been a stranger for days and nights.

Ipecacuanha.—This also belongs to the same category. It is probably one of the safest of this class of remedies, and may be freely enough administered to children. In fact, it will probably be found in every house where there are many children. It is a constant stand-by of the anxious mother whenever any of the household take a "cold on the chest." The wine is the most commonly employed preparation, and the most convenient. The dose, as an expectorant, is ♏10 to 30 (strength, 1 in 20).

Another very useful preparation of Ipecacuanha is the Lozenge combined with Morphia (Ipecacuanha, gr. $\frac{1}{12}$; Morphia, gr. $\frac{1}{36}$.) These are of most value when it is desired to produce an anodyne as well as an expectorant action, and will be found best suited for those cases where there are prolonged fits of irritating cough, with but small result.

Lobelia.—This drug is not in frequent use, because of the great nausea it induces, and occasionally extreme, at times alarming, cardiac depression. Still it may, with caution, be employed where, in addition to the ordinary inflamed condition of the bronchial mucous membrane, there appears to be some spasm of the bronchial muscles. It thus will find its most appropriate use in the treatment of Bronchitic Asthma, in which affection (in combination with Iodide of Potassium) in half-drachm doses of the ethereal tincture it may be regarded almost as a specific.

Ammonia.—In almost every stage of bronchitis, and in almost every form of it, this drug will prove of service. Even in the early pre-secretion stage of the acute variety our old friend—the Liquor Ammoniæ Acetatis—will form an excellent menstruum for, and a successful adjuvant to, the Antimonial wine. It promotes diaphoresis, and keeps up a gentle transpiration through the skin, thus aiding in the diminution of the fever. But after secretion is fairly established, it is then that the Carbonate of Ammonia or the Hydrochlorate will be found of special value as a stimulant expectorant. All the preparations of ammonia are largely eliminated from the system by the lungs; and probably in this very act they stimulate secretion, and help to liquefy the products of inflammation.

But independent of this direct action upon the lungs, it must not be forgotten that this drug possesses true stimulant properties, and excites the action of the heart. Hence one of its most valuable effects when administered in the adynamic forms of bronchitis, and in the capillary variety, as well as when the disease attacks the aged and debilitated. And here, probably, the Aromatic Spirit of Ammonia will be thebest preparation to prescribe. One caution I must give, viz., that the too long continued use of Ammonia has a tendency to impair the activity of digestion by neutralizing the gastric juice.

Possibly some such combination as the following may be serviceable in the pre-exudation period of acute bronchitis—

℞	Vini Antimonialis, ...	ʒiij.	
	Liquoris Potassæ, ...	ʒij.	
	Liquoris Ammoniæ Acetatis, . . .	℥iij.	
	Syrupi Aurantii, ...	℥iss.	
	Aquam, ad	℥vj.	M.

Sig.—One tablespoonful in a wineglassful of water every three hours.

I have incidentally alluded to the emetic property of some of these remedies, and occasionally it becomes necessary to induce this rather harsh, and always unpleasant, action. Thus if the mucus appears to have accumulated to great extent in the bronchial tubes, and owing, it may be, to the extreme feebleness or the age of the patient, it becomes impossible for him to expel it in the usual way, the result being great embarrassment to respiration,—then nothing so quickly and so effectively gives relief as an emetic.

This class of remedies acts in two ways. Some produce a direct effect upon the stomach—direct emetics; while others first enter the circulation before they produce their action—systemic emetics. In the first class, the drug, when introduced into the stomach, immediately irritates the gastric nerves. This irritation is conveyed to the nervous centre. There a motor impulse is generated, and is carried to the nervous and muscular apparatus concerned in the mechanism of vomiting, and the act is immediately initiated. To this class belong Sulphate of Copper, in gr. x. dose,—not a very advisable emetic, as it occasionally sets up gastro-enteritis as well as emesis; Sulphate of Zinc, gr. xx.; Mustard, one or two teaspoonfuls in a tumbler of tepid water; Alum, ʒj. in Glycerine or Golden Syrup. It is slow in action.

To the class of systemic emetics belong Ipecacuanha, Tartar-Emetic, and Apomorphia. The first is the one most commonly employed, though by no means the most powerful. Still it answers fairly well when given in doses of gr. xx. of the powder, or ℥ss. of the wine; and its action is promoted by causing the patient to drink freely of tepid water. It is the only one of the class to be administered to children and feeble persons.

Tartar-Emetic, though effective enough, is not much to be commended, because of the persistent after-depression which follows its use.

Apomorphia, a derivative of opium, though devoid of its anodyne aud hypnotic effects, is a pretty certain and prompt emetic,—this effect being attended with little nausea. Its action is probably due to the irritation it induces upon the nerve centres.

It may be given subcutaneously in dose of gr. $\frac{1}{10}$. The effect is sometimes uncertain, though when pure it may be expected to produce emesis in ten minutes. If kept in solution it is apt to decompose if exposed to light, and is said to lose its virtue when the solution assumes a green colour. I have also used it as an expectorant in smaller dose—gr. $\frac{1}{16}$ to gr. $\frac{1}{20}$; but it is uncertain in action, and does not always give satisfactory results. It should not be given with alkalies or syrup.

Secretion having been now fairly established, the use of the anti-catarrhal remedies which we have been discussing is no longer called for. Our treatment must now have for its object to facilitate the expectoration of the secretion, and to control it, if excessive. At this stage it is that the good effects of the *stimulating expectorants* are witnessed. These remedies act directly upon the mucous membrane. Some of them increase the secretion, others diminish it, and most of them modify it by rendering it less tenacious, more liquid, and consequently more easily expelled.

Squill.—Perhaps of all the drugs pertaining to this category this is the one most commonly employed, both by medical men and by the laity. It is of service where the sputa are viscid, and expectoration is difficult. It seems to increase the bronchial mucus as well as to render its removal more easy. This property will be heightened by combining it with Ipecacuanha and some sedative, such as Hyoscyamus or Belladonna. There are numerous preparations of it, all of them pretty efficacious. I will only ask you to bear in mind that the Syrup, one of the most favourite preparations, is incompatible with Ammonia.

Senega.—This is perhaps the commonest menstruum employed for cough mixtures. Why this should be I have always been at a loss to account for. Possibly it is pretty much matter of routine; but there are many objections to it. To begin with, the taste of it is most offensive to most people, being bitter and acrid; and thus to children it is repugnant in the extreme. But, worse than this, it does not always produce the desired effect. Different specimens are found to possess varying amounts of the active ingredients. These are believed to reside in the two glucosides which have been obtained from the drug, and in this way the uncertain action of Senega may possibly be accounted for. It is not very accurately known how it acts, but it seems to induce pretty continuous cough; it is presumed by some by stimulating the respiratory centre, while others hold that it produces this action by bracing and toning up the muscular coat of the bronchi. The infusion is the preparation commonly employed, in half-drachm dose.

Quillaja Saponaria.—I first made the acquaintance of this drug through the kindness of our excellent dispenser in this Hospital. He called my attention to the curious property which it possesses, in common with that of Senega, viz., of emulsifying oils when shaken up with them. You know that five or six drops of the

Tincture of Senega will emulsify half an ounce of a fixed oil. This is by reason of the Saponine which is found both in the Senega-root and the Quillaja-bark. This is of importance when you wish to make use of Turpentine or Terebene or Eucalyptus in cough mixture. Further investigation into the literature of this drug has led me to know that in the Quillaja-bark are found those two identical glucosides which are met with in Senega. And Dr Kobert, who has studied this subject thoroughly, informs us that they exist in about five times the proportion in which they are met with in Senega, while at the same time Quillaja is ten times cheaper than the former. More important still, however, is the fact that the glucosides are constant in quantity; while in addition to these the bark contains a considerable amount of sugar, which sweetens the decoction, and thus gives the latter an immense advantage over the Senega decoction, which has a most disagreeable and offensive taste. It is, therefore, better borne by patients; it seldom produces vomiting or purging, it is readily taken by children, and its expectorant action is beyond question. It is contraindicated in ulceration or inflammation of the stomach or intestines, since its too rapid absorption by the intestine demanded of its epithelium may induce poisoning.

It is observed that under the use of Quillaja the expectoration becomes easier and more copious, and respiration freer. It acts by increasing the vigour of the cough, thus facilitating expectoration, and the removal of secretion by rendering the latter at the same time more fluid.

It will be found of use in Emphysema, in Dilatation of the Bronchi, in Chronic Bronchial Catarrh, and in Pneumonia; in fact, wherever expectoration of secretion is difficult, and the mucus thick, tenacious, adhesive, and gluey. Such is the report of this drug which is recommended to us for use in the stage of bronchitis where secretion, though secured, is as yet somewhat difficult of expulsion. And the experience I have had of it in the main confirms this commendation. The preparation which I have hitherto used is the Tincture, in half to drachm dose. The Decoction is made from 5 parts of the bark to 200 parts of water. Dose, one tablespoonful.

Serpentaria Root is another stimulating expectorant. In addition to this property it is found to promote appetite, and to increase secretion from the bronchial mucous membrane. It forms a good menstruum for the exhibition of Carbonate of Ammonia. Of itself it is somewhat stimulant, and is particularly useful after the cessation of the fever stage in bronchitis by virtue of this property, while at the same time it appears to hasten the expulsion and transformation of the residual inflammatory products. Dose of the infusion, half an ounce to an ounce and half.

Alkalies are also useful in the secretion stage of bronchitis, more especially when there is suspicion of a gouty habit, and then the addition of a few drops of Colchicum Wine will expedite matters.

They liquefy the secretions, and are found to stimulate the movements of the ciliæ of the epithelium lining the bronchial mucous membrane. This is true more particularly of the potash salts.

Belladonna is of use, and particularly efficacious in acute inflammations of the air-passages where some anodyne seems called for. It will be found of value in the spasmodic difficulty of breathing which accompanies Emphysema. In combination with Ammonium Carbonate or other alkalies it will be indicated where the cough is frequent, secretion plentiful, but with difficulty removed. It is contraindicated in the pre-secretion stage of bronchitis, when the mucous membrane is still inflamed and tumefied, the skin harsh and dry, and the pulse rapid. But so soon as secretion is abundant, the skin moist, and the pulse quiet, then its good effects manifest themselves as an anodyne, rendering the cough less harassing, less frequent, and vastly more effective in expelling the mucus.

When the secretion continues excessive, and becomes too abundant and copious, then the *astringent remedies* will be called for, such as the terebinthinate preparations—Turpentine, Terebene, Eucalyptus oil—all of which are best given in the form of capsules, containing 5 to 10 drops, three or four times daily. Inhalations may also be prescribed, such as Pine Oil, Creosote, Compound Tincture of Benzoin, all of which can be most conveniently employed by throwing a teaspoonful of any one of them upon a basin of hot water, and leaving it in the bedroom near the patient's bed. The steam, as it is given off, carries with it the oil, and this is gradually diffused throughout the room; and thus the patient breathes an atmosphere charged with medicated and astringent vapour.

I have said nothing as yet about the use of foods appropriate to this acute disease. But common sense will dictate that the powers of the system must be kept up, and such forms of food employed as the patient can be persuaded to accept. In the weak and aged this is imperative if you would tide your patient over the disease. Food, such as milk, meat-jelly, egg-flip, must be given frequently, and at night especially, when the bodily powers are naturally weakest. Alcohol will be of great value when the heart begins to flag. Any form may be used; but it must be given liberally, and at repeated intervals.

Such are the leading points in the treatment of Acute Bronchitis. It is a disease which demands at the hands of the physician prompt and decisive treatment, more especially in the case of the aged and the very young.[1]

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[1] I have not thought it necessary to quote the authorities from whom I have drawn liberally, but I hereby gladly acknowledge my indebtedness to all.

II.—INTRODUCTORY ADDRESS TO THE EDINBURGH OBSTETRICAL SOCIETY.

By J. Halliday Croom, M.D., F.R.C.P.E., F.R.S.E., President, Obstetrical Society; Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary; Physician, Royal Maternity Hospital; Examiner in Midwifery, University; and Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

Our Society to-night enters on the forty-eighth year of its existence, and in opening a new session my first duty is to thank you for the honour you conferred on me a year ago in elevating me to the post I now occupy as your President. I am keenly sensible of the responsibility I have incurred in accepting such a trust from your hands, realizing as I do the high honour which it carries with it, and my own unworthiness to follow the distinguished men who have preceded me in this Chair. I am glad to congratulate you on the continued prosperity of our Society. From small beginnings it has now risen to a membership of 260, and is producing yearly almost as large a volume of Transactions as the Medico-Chirurgical Society, which has the two great departments of Medicine to draw from. Our financial condition continues alike to give satisfaction to and reflect credit on him who has so long and so successfully presided over our exchequer.

The past year has been fruitful in the production of much good work. The session was opened by a most interesting and exhaustive discussion, introduced by Dr Barbour, on the relation of micro-organisms and puerperal fever. We were indebted to Dr Symington for an elaborate and instructive anatomical paper on the uterus in the child. Dr Milne Murray made a very valuable addition to gynæcological literature by his series of careful experimental investigations on the action of water at different temperatures, in which he established, on a scientific basis, a clinical fact with which we had been familiar. Dr Berry Hart, with his usual ability, contributed a paper on the much-vexed question of rotation of the fœtal head. We have, as a Society and as a School, to thank Professor Simpson for his important communication on obstetrical nomenclature, which, if adopted, will do much to simplify the study and teaching of Obstetrics. Among the other papers of special interest were those of Dr Ballantyne on sphygmographic tracings in labour,—a paper which reflected much credit on one of our younger Fellows. Dr Skene Keith, in addition to the exhibition of many pathological specimens, contributed several papers full of clinical interest; while Dr Felkin, at the close of the session, gave us, as a result of his African travel, a suggestion on the determination of sex.

But amid the much that this new session brings of congratulation on the work done in the past, and of consequent hope for the future, we cannot but feel that we shall begin another winter's labour with many vacant places round our table, and with a roll of members thinned, as in no previous years so sadly or to such an extent, by death. Since I assumed the duties of this Chair, just a year ago, no less than ten of our members have been taken from us. We shall miss from our daily professional life the faces of such veterans as Cumming, Dunsmure, Finlay, Gordon, Williamson, and Pridie. They had reached the full term of mortal life, and after "bearing the burden and heat of the day," have earned an honourable rest. Of Macdonald, called from us too soon in the midst of his days and his usefulness, I have already been privileged to speak. Close on his death followed that of Sidey—he, too, in the throng of his active work. Younger than he, though he had indeed reached middle life, my old school-fellow Moinet has been taken from us. And, lastly, death, which has "all seasons for its own," and heeds neither age nor usefulness, has removed from the roll of our Society Fred Jelly, among the youngest of our Fellows and a favourite pupil of my own, leaving behind him the precious memory of a blameless life. It is for us

"To fill up the gaps in our files,
Strengthen the wavering line,
To stablish, continue our march
On to the bound of the waste,
On to the city of God."

The question which has been most prominently brought before those interested specially in gynæcology during the past year has been the removal of the uterine appendages for various forms of disease. The subject has been discussed at all the various societies. It has been the theme of much acrimonious and personal rancour. It has even penetrated into our courts of justice. It is a question of deep and abiding interest to us as gynæcologists. If it confers on the suffering woman the benefits which its advocates claim for it, then it is a triumph of abdominal surgery, second only to ovariotomy itself. If it does not, then those who advocate it have opened up a surgical operation which either in the hands of unscrupulous men, or men of feeble judgment, gives the utmost latitude for the practice of a most questionable form of gynæcology.

The removal of the uterine appendages, when affected by minor forms of disease, is one of the easiest operations in surgery, and like all easy operations for the removal of important structures, requires to be hedged about with the utmost care. The fact that this operation can be and is performed daily, and with success too, by men who have not been specially trained in surgery, is of itself a proof, if any were wanting, of the comparative ease of the operation. Further, when we consider that the operation involves the removal of organs which are, so to say, "the pivot on which the human race turns," and which, therefore, when once removed deprive the woman entirely of the privilege of maternity; when we further consider the uncertainty in many cases of condemning them as being incapable of fulfilling their physiological functions; and if regard be had to the fact that the ordinary woman can but imperfectly understand the true import of their removal, then, I think, we establish good ground for making clear the indications for the operation.

It seems to me that as a Society we should try to formulate an opinion on a subject of such importance. I am well aware that it will be said of this operation, as of all other operative procedures, that it suffers at present from comparative novelty, and that every operation is at first done to death. Perhaps no better example can be adduced than that of Emmet's operation, which is amongst the latest illustration of the kind. I venture to believe that this operation, within the last few years, is not performed more than half as often as it used to be.

What, then, are the conditions under which removal of the uterine appendages ought to be undertaken? In employing the term *removal of appendages*, I am using that which Mr Lawson Tait—to whom belongs the credit of introducing and popularizing the operation—has applied, in preference to castration, oophorectomy, and so forth, to these cases where the ovaries and tubes are removed, except where they are the seats of large tumours. Under what circumstances, then, is this operation justifiable? The first class of cases where the operation comes under consideration is when it is performed with a view of checking uterine hæmorrhage, whether that be from a rapidly growing bleeding fibroid, or from a soft bleeding uterus.

In such cases the principle of the operation is the induction of cessation of menstruation and the production of retrogressive changes in the tumour. Naturally, the question of cause of menstruation suggests itself. Does it depend on tubes or ovaries, or both, or neither? This, however, I am not concerned to discuss. There can scarcely be a doubt, from a large body of accumulated experience, that in the majority of cases the complete removal of the ovaries and tubes, so far as it is possible to remove the tubes completely, arrests uterine hæmorrhage, and modifies, to say the least, a fibroid growth. I admit that this is not invariable, for I have myself seen cases where the hæmorrhage has continued for at least two years after the removal of the ovaries and tubes. On the whole, however, the general consensus of opinion is in favour of this operation in the case of rapidly growing fibroid. The earlier the necessity for this operation is recognised the better will the results become, for once it is acknowledged that the removal of the ovaries and tubes checks the growth of the tumour, the sooner will the hazardous operation of hysterectomy become obsolete. Here, again, however, owing to the frequency of fibroid tumours, the operation is liable to be overdone to almost any extent, and the line must be definitely drawn at those tumours which are rapid in their growth, or which threaten life and health by hæmorrhage. Within what dimensions we can hope to remove the appendages with safety is an open question. Sometimes even in small tumours, owing to the splitting and shortening of the broad ligament, there is difficulty experienced in bringing the appendages to the surface. In any case where the tumour has reached the size of a five months' pregnancy the limits of safe removal will probably have been attained.

Again, with regard to that class of cases where the appendages are the seat of purulent or hæmorrhagic collections, the indication for their removal is obvious. The principle here involved, however, differs entirely from the cases previously alluded to, for in the latter variety it is simply dealing with a purulent collection in a tube, involving, it may be, only the removal of the tube on one side, not even of the corresponding ovary. In my opinion, the diagnosis of such condition is by no means easy. A study of the pulse and temperature, a careful bi-manual examination, if need be under chloroform, is essential for their recognition; for I hold it is our bounden duty to make our diagnosis as accurate as possible before operation. We are told by those who go in most largely for these operations, that a bi-manual is, first, useless, and secondly, dangerous. But why useless? If we grant an accurate —so far as that is attainable—diagnosis essential, I am not aware that there is any method short of a careful bi-manual which reveals to us the exact relation and condition of the parts within the pelvic cavity. Even with a very carefully conducted bi-manual, the task is sometimes difficult enough; but without it diagnosis must degenerate into a mere guess. As a school we have done our best to inculcate this doctrine; and I, for one, still believe that accurate diagnosis is a consummation devoutly to be wished for in every case before resort is had to the knife. This is so in every other branch of medicine and surgery; why should pelvic surgery be an exception?

But it is averred that the bi-manual is dangerous in these cases. Again, I ask why? If it be kept in view, as is always taught, that the lighter the touch the more thorough will be the appreciation of the sense, what harm can come of it? The answer is, that by handling the organs in this way you may rupture a tube, swollen either with pus or blood, and extravasate the contents into the pelvic cavity. Here let me quote the words of Emmet, speaking of the method of making vaginal examinations,—"It is, indeed, remarkable what a difference in this respect exists between individuals. One will undertake the examination with as much vigour as he would use were he to bore a hole into a pump-log, and is sensible to little more than the cervix, which feels like an obstruction in his way. He will gain no information of importance, and will inflict needless pain on the patient. Another, in less time, will pass his fingers lightly over every portion of the vagina and quickly gain information to enable him to fully understand the case without having caused any pain. The manner," Emmet continues, "in which I have sometimes seen this examination conducted, even by men of experience, could only be described as brutal, in consequence of the needless amount of suffering inflicted, evincing a want of tact sufficient to debar him from the practice of any other branch of the profession."

So far as my comparatively small experience is concerned, there is no class of cases in which the operation is more clearly indicated, and where the benefits are so unquestionable, as those where the ovaries and tubes have become the seat of gonorrhœal infection, and where the classic symptoms and signs of tubal disease are well marked.

When the sterility and dysmenorrhœa are incurable, when the pelvic pain and distress are constant, and when the patient runs an ever recurring risk of dangerous and even fatal inflammation being lit up on comparatively slight provocation,—in such cases it seems to me that removal of the diseased organs is sanctioned by the strongest prudential motives.

It is, however, in inflammation or inflammatory deposits in or around the tube or ovaries that the difficulty lies in laying down some definite line of practice. In a case where, after a labour or an abortion, the patient has suffered from severe or neglected inflammation, where the ovaries and tubes are matted together into one indistinguishable mass, where the patient, as a matter of course, is sterile, where the menstrual pain and general pelvic discomfort are pronounced, and where the condition has resisted all the ordinary forms of treatment, removal of the appendages comes to be a question, *not* of *urgency* as in the fibroid cases, *not* of *necessity* as in the pyosalpinx, *not* as a matter of *safety* as in the gonorrhœal cases, but simply and solely as a matter of increased comfort to the patient. Hence, therefore, as comfort is merely a relative term, it is of the utmost consequence that any operation undertaken to relieve a disease which neither of itself causes death nor shortens life, should be guarded round with every care. All of us know, from past hospital, dispensary, and private practice, that there are hosts of women who are the subjects of inflammatory deposits, adhesions the result of abortion, hæmatocele, and so forth, who in the humbler class of life perform their domestic duties with but little complaint—perhaps to them even their acquired sterility is something of an advantage—while to others in the better classes the condition is one of continuous complaint. To this latter, removal of the ovaries does not repair their over-strained nervous system, nor, of course, does it bring them a pregnancy. In neither case is the operation strongly indicated. Its results, though often satisfactory, are by no means uniform, and hence the operation is to be undertaken only after the most careful consideration. There are, however, a set of so-called inflammatory cases at which I think some line should be drawn. Let me give a clinical picture of what I mean, and of what must be familiar to you all. A woman, generally young and in comparatively good health but for her pelvic discomfort and, perhaps, her sterility. On inquiry, she has some premenstrual pain, painful coitus, and her menstruation is rather profuse. On local examination the ovary or ovaries are felt enlarged, tender, and probably prolapsed. On careful bi-manual examination the tubes are palpated, and felt thick and enlarged. The diagnosis is subacute inflammation of the tubes and ovaries. On listening to the records of abdominal sections one hears of numbers of such cases which have been operated on. Here I for one draw the line. There is no reason to suppose that inflammation of the ovaries and tubes should not respond to appropriate treatment—on the contrary, there is every reason to believe it does—any more than that of other organs in the body.

There is no reason why a woman should be deprived of her ovaries because they are chronically inflamed any more than a man should be deprived of his testicles because there is some thickening of the tunica vaginalis as a result of orchitis or some neuralgia of the cord, or because he is the subject of well-marked varicocele. Women affected in this way are often, I admit, but by no means invariably sterile. I can at this moment point to two women who for years were sterile, and presented the symptoms which I have just instanced, and have since borne children.

The unvarying reply given by those who advocate these operations is that the women themselves must be the judges as to whether the operation ought or ought not to be performed. Why so? In a case of growing fibroid I say the ovaries *must* be removed, in order to avoid a more dangerous operation later on. In a case of pyosalpinx removal of the suppurating mass is a necessity. In a case of gonorrhœal infection the organs are useless, the suffering is great, and the risk of dangerous inflammation is constant. Even in a case of simple inflammation and fixation there is a good deal to be said in favour of operation, but in those cases which I have mentioned last, where the ovaries and tubes are movable, the operation, if undertaken at all, is an extremely questionable one, and for the following reasons:—1st, Because it is impossible in such cases to say that the organs are organically diseased. 2nd, Because pain and pelvic distress are such movable quantities. 3rd, Because in the majority of cases the symptoms complained of can be, to say the least of it, ameliorated by less severe remedies. Lastly, Because an hysterical element so often enters largely into these cases, which operative interference very slightly, if at all, removes.

It has been urged that numbers of those women who suffer in the way I have just mentioned belong to the working class, in whom measures so essential to relief, viz., rest—physical, mental, and, above all, sexual—along with local treatment, such as hot-water, blisters, etc., are unattainable. Yet I question if the long and absolute rest required after an abdominal section extending over many weeks would not be as beneficially employed in rest and treatment without the operation. That a condition of hysteria or neurasthenia, acquired or otherwise, enters largely as a factor into many of these cases must, I think, be admitted by most of us. This, I am confident, requires to be treated as well and as much as the local removal of the organs at fault.

The treatment, I venture to believe, advocated by Erb, Weir Mitchell, and Playfair, might in many cases be carried out as a substitute for some, and an adjunct in many cases of removal of the uterine appendages for inflammatory conditions.

It is certain, at any rate, that the cases of removal of the uterine appendages into which any element of hysteria enters are the least successful in their ultimate results. The question as to the removal of these organs for reflex and mental conditions, epilepsy, etc., is one into which my own want of experience prevents me presuming to enter. I feel sure that we require much more evidence than we at present possess for sanctioning the performance of an operation in such debatable ground, and I am confident, in this school at least, that the adoption of this operation will be received with the caution characteristic of our country.

III.—A CASE OF CEREBELLAR TUMOUR.

By George Leslie, M.B., F.R.S.E., Falkirk.

WITH PATHOLOGICAL REPORT.

By Byrom Bramwell, M.D., F.R.C.P.E.

(*Read before the Medico-Chirurgical Society of Edinburgh, 1st December* 1886.)

On the 11th April 1885 I was called to attend Mr J. M., æt. 24, assistant to his father, who is a master in the building trade, residing at Falkirk. He complained of severe, almost constant, frontal and supra-orbital headache. I learned that up to the age of 20 he had enjoyed good health, but towards the end of 1880 he suffered from tonsillitis, and about the same time began to be subject to attacks of vomiting, and to feelings of torpor and general malaise. During 1881 vomiting was frequent, and by the early spring of 1882 it was very severe, resisting all remedial measures. In May of this year, however, he had sufficiently recovered to be able to go to sea, and he spent the most of the time, from May till October, cruising off the western coast and islands. He seemed to derive much benefit from this, the vomiting ceased, and he returned home apparently convalescent.

Soon after his return his mode of walking was observed to have changed; it was no longer perfectly steady and firm, but was somewhat lurching, suggestive of a sailor's land gait. No importance was attached to this, as it gave the patient no inconvenience, was not accompanied by giddiness, and it was supposed by his friends to be a habit acquired at sea. He was also observed to have a greater tendency to sleep, being often abnormally drowsy, and he could only with difficulty be roused in the morning.

In January 1884 he began to complain of frontal headache, which was aggravated by stooping or other movement, and by July it had become very severe. From this time, until the date of my first visit, headache had been almost continuous, was usually frontal, but was now sometimes also referred to the right occipital region, and it was the most prominent of his symptoms.

About the end of 1884 the peculiarity of gait became exaggerated, and his father informs me that he first observed a distinct staggering movement, as he walked behind him in January 1885. This staggering or reeling gait had been earlier noticed by his acquaintances, and had sometimes been attributed to causes which were not in operation.

His memory, which had never been very good, began to fail sensibly early in 1885, so that he frequently got into difficulties by forgetting business orders and instructions.

His social condition and surroundings had always been very favourable. There was no history of alcoholic or other form of intemperance, of syphilis, or of any serious personal accident or injury. His family history was good, and there was no suspicion of any inherited disease.

During my first examination I found that the external conformation and development of the patient was good. He was of average height, and his muscular system was very well developed. He was not confined to bed. The facial expression was dull, heavy, and pained, although his general aspect was that of intelligence. The temperature was normal.

In the nervous system the most obvious symptom was the cephalalgia, referred to the frontal region. The pain was described as being very severe, almost continuous during waking, and of a darting character. Vision was little impaired, but ophthalmoscopic examination revealed optic neuritis, more marked in the right eye, and in an early stage. The pupils were dilated, but were equal, and responded normally to light and to accommodation. The other sensory functions, the organic reflexes, the skin and tendon reflexes, exhibited no distinct abnormality. All his movements were performed slowly, and this was especially noticed in his measured and deliberate articulation.

While examining the motor functions, it was seen that locomotion was imperfect. He was able to walk fairly well, but his gait was unsteady, showing swerving or rolling side motions. No particular bias to either side could be detected; there was no appearance of rotatory movement. He was able to stand erect without discomfort with his eyes closed. A few days after my first examination I had an opportunity of seeing him walk on the street when he was unconscious of being medically observed. He was then walking slowly and carefully, but not quite steadily; he appeared to be exercising voluntary control over the muscles of locomotion. A casual observer might have noticed little or no peculiarity.

All my questions were answered by the patient with great clearness and intelligence; there was evidently absence of any mental affection. There was complaint of tendency to sleep in the early part of the day, of a feeling of torpor, and of impaired memory. Strict inquiry was made as to the occurrence of giddiness, but the patient assured me that this had never been experienced.

The tongue was coated with a yellowish fur; there was chronic hypertrophic tonsillitis. The appetite was stated to be large, sometimes excessive, and the bowels usually constipated. The urine was slightly phosphatic. In other respects physical examination did not reveal any noteworthy feature.

The diagnosis was that the symptoms were caused by a cerebellar tumour, and the prognosis was consequently unfavourable.

I prescribed 10 grs. potass. iodid., 15 grs. potass. bromid., with ½ oz. inf. chiratæ, to be taken three times a day. This was continued for about a month, together with treatment for the constipation and tonsillitis. The effect was at first exceedingly beneficial—the headache, previously so continuous and severe, entirely ceased, and a feeling of wellbeing, which had been so long absent, was established. The patient was able to walk out daily, although still with the uncertain gait. About the beginning of May, however, the headache gradually returned, increasing in severity notwithstanding the continuance of treatment, and on the 14th May I brought him into Edinburgh for consultation. Dr Byrom Bramwell examined him, arrived at the same diagnosis, and asked me to continue the treatment directed to decrease the intracranial pressure.

For about a month after this, viz., till the 12th June, the symptoms were not very urgent, headache was not much complained of, and the gait had not visibly altered for the worse. On the 13th there was an attack of conjunctivitis which quickly disappeared under treatment, and about the 15th headache began to be very severe. On the 18th it was intense, and on this date vomiting, which had not occurred for three years, returned. It was frequent, was not accompanied with nausea, but came on without any warning. There was also an irritative cough which evidently did not depend on the state of the pulmonary viscera. During the short sleeps which were obtained respiration was seen to be much interfered with. The breathing was not typically cerebral, but the cycle usually contained a full, deep respiration, then a more shallow one, which was followed by a pause of from 30 to 50 seconds' duration. The treatment at this time was mainly palliative.

By the 22nd June the symptoms had so abated that the patient was able to get out of bed. It was then seen that the power of locomotion was much diminished, he could only walk while steadying himself by the wall or other support. The facial expression had somewhat changed, and it was, for some little time after this, vacant and staring. He was morose, and did not like to be noticed.

On the 24th June I was informed that there had been two general spasms during the preceding night, also clonic spasms of the left little finger, and strabismus. The headache was not now severe, and the vomiting and cough had ceased. On the 26th, at 3 A.M., during sleep, there were clonic spasms of the right arm for five minutes, and later in the morning complaint of cramp in the right leg. The breathing was normal, and headache was absent. On the 28th, at 4.30 A.M., there were clonic spasms of the right arm and leg. He was able to get out of bed, but walked with great difficulty. On the 29th giddiness was for the first time complained of, and was occasionally present for two or three days. In the beginning of July interference with the vaso-motor function was made apparent by an œdematous condition of the eyelids and the neighbouring tissues, and this continued, varying in degree, for about a fortnight. On the 10th July headache, which had been absent for fourteen days, was again present, and also irritative coughing. On the 16th I was called at 6 A.M., and found the headache intense, and referred to the frontal and right occipital regions; there were violent tremors of the whole body, causing the bed to shake. Right tinnitus aurium was also complained of, and was compared to the sound of an engine blowing off steam. During this day cephalalgia was very severe, and vomiting very frequent. The patient only slept one hour.

By the 20th July the distressing symptoms had again almost disappeared, and the patient was soon able to get up every day. From this time until the middle of August frontal headache was felt for a few hours every morning, and there were occasional attacks of vomiting, but no spasms or interference with respiration. On the 17th August, and for a few days afterwards, he complained of a tendency to step or fall backwards when he was attempting to walk. On the 20th August I sent him to reside with friends in Avonbridge to try a change of air and scene, and after this I had less frequent opportunities of seeing him. The only new symptoms of importance which developed during the rest of his life—he died on 3rd November—were what were described as fainting attacks, varying in duration from one to five minutes, and which, as Dr Bramwell has suggested, were probably epileptoid.

Exacerbations of headache and vomiting took place at decreasing intervals, until within the last fortnight they occurred every two days. Optic neuritis had been latterly rapidly advancing and vision was very imperfect, but the patient could still see to shave until three weeks before his death. Hearing was always good. The mental functions never failed; on y two days before his death he was able to remain downstairs for most of the day, and to converse intelligently. Death occurred half-an-hour after an attack of vomiting. There was euthanasia.

Dr Byrom Bramwell came to Falkirk for the post-mortem examination, and took the brain to Edinburgh. The following is his report on its pathology:—

The post-mortem examination was made on 6th November 1886; the head only was examined.

The scalp, skull cap, and dura were normal. The convolutions of the brain were flattened in an extreme degree and the sulci completely effaced; there was no evidence whatever of meningitis either at the base or the convexity—a point of interest in connexion with the extreme double optic neuritis which was present.

On slitting up the tentorium cerebelli, a cyst, fully the size of an ordinary orange, projected from the upper surface of the cerebellum, and seemed more especially to involve the middle and right lobes.

The wall of the cyst was in places extremely thin and fragile; and the cavity of the cyst appeared—for it was not cut into—to be filled with a clear transparent limpid fluid.

The pons and medulla were flattened, compressed, and softened—the usual condition in large cerebellar (sub-tentorial) tumours.

The other parts of the brain appeared to be—and were on subsequent examination found to be—healthy. The ventricular system of the brain was dilated, though by no means to such an extreme degree as I have sometimes seen as the result of tumours of the middle lobe of the cerebellum.

The sub-vaginal spaces surrounding the optic nerves were distended with fluid; most marked optic neuritis could be seen with the naked eye in each fundus oculi.

With the object of having the brain photographed, and the appearance of the cerebellar cyst exactly reproduced, the specimen was not further examined at the time of the post-mortem, but was placed in a basin and taken by rail to Edinburgh. Unfortunately the jolting of the railway carriage proved too much for the thin wall of the cyst, for on arriving at home I found the cyst collapsed and its contents escaped.

On careful examination the middle lobe of the cerebellum was found to be almost entirely destroyed by a gliomatous tumour, in one part of which a flat, gritty, calcareous nodule, in diameter fully the size of a fourpenny-piece, was found. The tumour of the middle lobe of the cerebellum was situated in the posterior wall of the cyst, and there could be little doubt that the cyst was a secondary development of the tumour. The cyst had made its way under the superficial fibres of the upper surface of the right lobe of the cerebellum. The left lateral lobe was somewhat compressed but otherwise healthy; the right lateral lobe much compressed and somewhat atrophied; its upper surface being, as has been previously mentioned, invaded and destroyed, but only superficially, by the cyst.

On microscopical examination, the tumour was found to be a glio-sarcomatous tumour; in places the tumour tissue was remarkably vascular; numberless collections of hæmatoidin granules, the representatives of former blood extravasations, were scattered here and there throughout the tumour. In some parts of the tumour the walls of the vessel were enormously thickened and infiltrated with a clear, translucent, highly refractive material which stained

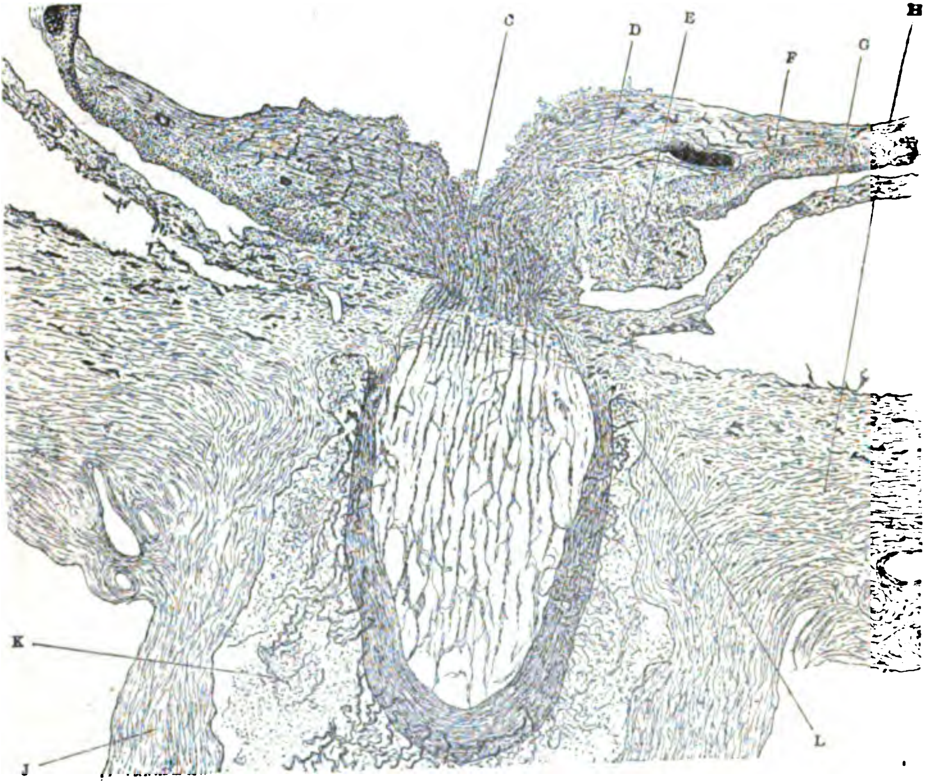

FIG. 1.—*Camera Lucida Drawing of a Section through the Optic Nerve and surrounding parts in Dr Leslie's case of Cerebellar Tumour, showing great swelling and vascularity of the optic papilla, the presence of inflammatory products in the sub-vaginal space, and swelling of the connective tissue trabeculæ surrounding the pial sheath. Stained with Picro-Carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam.*

C, centre of that portion of the optic papilla which is seen in this section; D, large vessel, which is in places distended with a dense mass of blood corpuscles; E, swelling of the deeper layers of the retina adjoining the optic papilla; F, deeper layers of the retina at a place where they are healthy; G, choroid, which has become detached from the retina and sclerotic; H, sclerotic coat; J, vaginal or dural sheath of the optic nerve; K, sub-vaginal space, situated between the dural and pial sheaths of the nerve, and which is distended with inflammatory products, right up to its termination (L).

pink with picro-carmine, and which was evidently the same hyaline material as that found in the walls of the gliomatous tumour of the left frontal lobe which was brought before the same meeting of the Medico-Chirurgical Society at which this paper was read, and which will be described in a future number of this Journal.

The optic papillæ were found, on microscopical examination, to be in an advanced stage of papillitis; the trunks of the optic nerves behind the lamina cribrosa also presented marked inflammatory appearances, more especially in their peripheral portions, *i.e.*, just below the pial sheath. The sub-vaginal space was distended with what seemed to be inflammatory products (some red blood corpuscles, granular debris, and lymphoid cells); the connective tissue trabeculæ crossing the sub-vaginal space were much thickened and their nuclei very prominent. These appearances are well seen in the figure.

Remarks.—Among the points of interest which this case affords the following may be noticed:—(1.) The long duration of the disease. There can be little doubt but that the cerebellar lesion preceded the vomiting attacks, which first appeared in the end of 1880, five years before death. Vomiting was an early as well as a late symptom, and, according to the description given by the patient, was of uniform character, and it latterly was of distinctly central origin; (2.) The mode of growth of the tumour, which could clinically be divided into three stages—the first, of onset, from autumn 1880 to summer 1882, corresponding to the period of tumour formation; the second, of comparative latency, to the beginning of 1884; and the third, of recurrence, from this time until death. During the third period there must have been rapid cyst formation, and consequently greatly increasing intra-cranial pressure; (3.) The severity of vomiting as a symptom of cerebellar disease, and which, together with the respiratory and vaso-motor symptoms, were doubtless the result of irritation of adjacent centres in the medulla; (4.) The almost complete absence of vertigo. In the treatment the administration of iodides, with a free use of laxatives, was often of great benefit—anti-syphilitics had no appreciable effect.

IV.—TO ASCERTAIN WHETHER GANGRENE IS LIKELY TO FOLLOW SEVERE INJURY OF A LIMB.

By W. Scott Lang, M.D., F.R.C.S.E.

In cases of severe injury to limbs, it is frequently difficult to determine whether the bloodvessels have been so much injured as to necessarily involve gangrene of the part beyond the seat of injury.

Pulsation in the main vessels beyond the seat of injury is often indistinct and difficult to make out, to say nothing of the chance of abnormal distribution of arteries.

The following method of procedure is recommended as being useful to enable a surgeon to obtain an accurate idea of the probability of the circulation being restored:—

Gently raise the limb, and keep it raised for two or three minutes, in order to empty it to some extent of blood, then apply a tourniquet or piece of elastic webbing on the proximal side of the injury and keep it applied for about a minute—lower the limb, remove the tourniquet, and if sufficient circulation remains, the part beyond the seat of injury will blush rosy red, and will show in an unmistakable manner the condition of the bloodvessels.

Bleeding points can, of course, be temporarily secured by forcible pressure. This procedure was adopted by the writer in a case of severe compound comminuted fracture of both bones of the leg. The patient was a boy, aged ten, who had been run over by a tramway car in one of the suburbs of Edinburgh, and was admitted to the surgical wards of the Royal Infirmary, under the care of Mr Joseph Bell. The limb was almost "dangling" and apparently hopeless, but after having adopted the process above described, it was observed that the dorsum of the foot blushed after the elastic webbing had been relaxed.

Some pieces of bone were removed, and by drainage and the usual antiseptic treatment of compound fractures, the boy made an excellent recovery with a useful limb.

I think this procedure might be used in order to ascertain whether a finger almost entirely cut through will live. It is recommended because of its simplicity and safety, and if well managed, it gives a very pronounced indication of the condition of the bloodvessels.

Pulsation in posterior tibial or in anterior tibial artery need never be pronounced "doubtful," and although an experienced surgeon takes many inexpressible points into consideration before deciding the question of amputation, the information to be gained by this proceeding will be valuable in many cases.

It may save house-surgeons much anxiety as to whether they are justified in attempting to save a limb very severely injured. If the blush of the return circulation shows itself, the part may be safely pronounced viable.

Although I have not had an opportunity of practising this manœuvre further than in the case above alluded to, I would suggest that in cases of frostbite, or in embolism—say of the popliteal artery—its employment will promptly show the extent of approaching gangrene. One might thus be enabled to amputate early, and obviate "waiting for the line of demarcation to form," with attendant risk of septic absorption.

V.—CHRONIC LARYNGITIS AND ITS SEQUELÆ.[1]

By G. Hunter Mackenzie, M.D., Laryngologist to the Eye, Ear, and Throat Hospital, Edinburgh.

Chronic inflammation of the larynx is not only important in itself, but is more particularly so by reason of the conditions to which, under certain circumstances, it may give rise.

Simple chronic laryngitis and thickening of the laryngeal structures may occur as a consequence of acute laryngitis, or from attacks, continued or repeated, of the sub-acute variety of the disease. Occasionally its mode of development is protracted and insidious. It may be *partial* in character, as in the case I now show you, in which a very acute laryngitis has resulted in a permanent thickening of the left ventricular band and the mucous membrane covering the arytenoid cartilage, with fixation of the corresponding crico-arytenoid articulation and vocal cord. The right half of the larynx, it will be noted, is apparently quite normal, and the compensatory action of the vocal cord is very marked. On the other hand, an example of *general* laryngitis, more or less affecting the whole of the intrinsic structures, is exemplified by this other case, in which bilateral thickening and swelling are amongst the most prominent of the laryngoscopic characters. This question of degree or locality of the inflammation bears, as I hope to be able to demonstrate to you, an important relation to prognosis.

Chronic laryngitis may be *primary* or *consecutive*. Primary chronic laryngitis indicates that the laryngeal affection has not been preceded by any local or any general affection, whilst the term consecutive may be applied to that variety of the disease which occasionally precedes or supervenes during or after the course of the zymotic diseases, malignant disease, or pulmonary phthisis, or which is the result of extension from the nares or pharynx. It is important to bear in mind that the specific affections of the larynx are usually preceded, accompanied, or followed by more or less chronic inflammation, which occasionally complicates, or even masks, their specific characters, and consequently has an important reference to diagnosis and treatment.

The laryngoscopic characters of simple chronic laryngitis are of a somewhat varied nature. Thickening and induration of the vocal cords, which, instead of presenting their normal white smooth character, assume a partially or completely reddened, or, not unfrequently, a "fleshy" appearance, swelling and prominence of the ventricular bands and inter-arytenoid fold, and general hyperæmia of the intra-laryngeal mucous membrane, are amongst the most common of the laryngoscopic characters. Occasionally small granulation-looking growths project from the surface of the transformed vocal cord, and give an unevenness to its outline. Though superficial erosions are tolerably common, it is very seldom that true ulceration or loss of substance characterizes the lesions of simple chronic laryngitis. When this does occur, we must suspect the presence of one or other of the dyscrasiæ (struma, tuberculosis, syphilis). In certain instances, thickening of the infra-glottic mucous membrane has been seen, an occurrence which unfavourably affects the prognosis.

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[1] A lecture delivered during the Winter Session 1886–87.

The character of the voice almost entirely depends upon the amount or degree of structural alteration undergone by the vocal cords. Huskiness (occasionally spasmodic), hoarseness, and aphonia are the vocal conditions which may be present. Complete aphonia (whispering voice) is, in the absence of nervous or mental causes, indicative of severe laryngeal changes, and is consequently a symptom of greater gravity than either huskiness or hoarseness. A whispering voice is produced by the lips and tongue independently of the larynx, and is the refuge of those who have suffered extensive destructive changes of their vocal cords, or of their vocal cords and ventricular bands. For it is worth while remembering that, should the vocal cords be destroyed, a fairly effective voice can be produced by the ventricular bands, which appear then to undertake a somewhat compensatory function. As already stated, it is seldom that ulceration or loss of substance ensues as a result of simple chronic laryngitis, and though the voice may, in severe cases, be whisperingly aphonic, this depends upon the thickening and degeneration of the vocal cords, and has been consecutive to periods, more or less prolonged, of huskiness or hoarseness.

The respiration in the ordinary variety of simple chronic laryngitis does not usually vary from the normal standard. In a few aggravated cases, one of which I now show you, I have witnessed the presence of a very slight degree of laryngeal dyspnœa—noisy, somewhat stridulous inspiration, with a comparatively facile and silent expiration—but I have never seen such an amount of laryngeal obstruction present as to give rise to alarming symptoms, or to necessitate the opening of the windpipe. Nor does the larynx make those up-and-down movements which frequently accompany the respiration in such a disease as laryngeal diphtheria, in which the obstruction to the respiration is sometimes very great. In the infra-glottic variety of chronic laryngitis, however, with which perichondritis is sometimes associated, the respiratory impediment may be so great as to necessitate tracheotomy.

I believe the cough so frequently present in chronic laryngitis to be a cause of aggravation of the disease. The irritation of the larynx, induced by the acts of coughing and expectoration, tends to perpetuate and extend the inflammatory process, and frequently neutralizes many of the advantages that would otherwise accrue from treatment. The cause of this cough may be simply the presence of an irritant (secretion) in the respiratory tract, or, as Lauder Brunton has pointed out, the action of such an irritant may be aided by the presence of irritation elsewhere. When the pharynx and larynx are congested, but not sufficiently to induce coughing, the presence of an irritant in the stomach will assist the irritation in the respiratory passages, and cough will be produced. It appears to be the case that slight irritation at that part of the pharynx where the respiratory and digestive tracts cross each other is particularly prone to induce both vomiting and coughing. It is in the laryngitis of children more especially that participation of the pharynx, root of the tongue, or soft palate in the inflammatory process, is most productive of cough, which is frequently very severe, and accompanied by violent expulsive efforts.

In addition to the symptoms now enumerated, chronic laryngitis may, under certain circumstances, be the cause of gastric disorders. This occurs when pharyngitis, to which we have already partially traced the cough, is present. When, from the presence of saliva in excess, or from the sense of irritation or tickling at the back of the throat, frequent movements of swallowing are made, an excessive amount of air passes into the stomach, and gastric flatulence is the result. On the other hand, acidity in the stomach may cause frequent swallowing, perhaps because the discomfort is momentarily relieved by the alkaline saliva as it passes from the œsophagus into the stomach (Brunton).

In chronic glandular laryngitis the minute racemose glands of the larynx are principally affected. It is usually associated with, and generally results by direct extension from, follicular or granular pharyngitis, popularly known as "clergyman's sore throat." From the cause above enumerated, cough and stomachic flatulence are prominent symptoms of this disease.

There is a very important and not uncommon form of chronic laryngitis which I am induced to mention here on account of the peculiarity of its cause. I refer to that variety which is associated with, and frequently depends upon, some degree of nasal stenosis. You have already seen several cases in which a chronic laryngeal catarrh, never so intense as to lead to thickening of the vocal cords, has been present in patients with partial obstruction of the nares, and who have been cured or greatly relieved by nasal treatment. The principal cause of the laryngitis in these instances—obstruction to nasal respiration, and the consequent irritation of the larynx from oral breathing—is somewhat different from that of the chronic laryngitis frequently associated with post-nasal catarrh. Here the laryngitis seems to depend, not so much upon obstruction of the nasal respiration, as upon the irritation of the pharynx and larynx by the secretion, and the direct extension of the inflammation from the nose to those parts. A severe form of inflammation, commencing in the nose, and slowly spreading to the pharynx, larynx, trachea, and even bronchi, has been described by Stoerk under the title of "Blenorrhœa of the respiratory mucous membrane." It frequently causes stenosis dangerous to life. The possibility of laryngitis being consecutive to nasal catarrh points to the propriety of making a careful examination of the anterior, and especially of the posterior nares in all instances of that complaint.

It is now necessary to consider in detail some of the sequelæ of chronic laryngitis. Instead of ending with simple thickening of the laryngeal structures, it appears to be an undoubted fact that, particularly in the insidious forms of inflammation, the possibility of tubercular degeneration is always present. The history of such a case is somewhat as follows:—The throat affection is usually of some years' duration, with local (vocal) symptoms solely during the earlier years. Latterly, these have become more exaggerated (hoarseness and aphonia); pain, especially during deglutition, has become a prominent feature; the general health has commenced to suffer, and pulmonary troubles have developed. There can be no doubt that in such cases we have to deal with what is a primary inflammation of the larynx, for at an early period of the disease the troubles are entirely local, the lungs are apparently unaffected, and the general health is unimpaired. I would here remind you of the fact, however, that this method of the development of tubercular laryngeal disease is much rarer than where it is consecutive to antecedent similar disease of the lungs. I show you the larynx of an elderly gentleman who suffered for several years from chronic laryngitis, without pulmonary troubles or affections of the general health. Latterly, laryngeal and pulmonary tubercular (bacillary) disease set in, of which he died. You will notice the great amount of intra-laryngeal destruction present. Yet this was the termination of a case whose earlier history was that of simple chronic laryngitis.

What are the indications of the existence of this most important degeneration? The laryngoscopic characters indicating that a simple laryngitis has become tubercular are not by any means pathognomonic. It is different with the later stages of tubercular disease, for the presence of characteristic swellings and tumours, or of ulcerations, indicates that we have now to deal with something more than simple inflammation. The presence of certain of the general symptoms of tubercular disease, plus certain which are usually associated with the laryngeal variety of the disease, are insufficient to indicate it. Lauder Brunton, for instance, narrates a case of severe toothache, with aphonia, anorexia, cough, wasting, and fever, symptoms closely resembling those of laryngeal phthisis, which completely disappeared on the extraction of the offending teeth. It is only by the microscopical examination of the sputum and laryngeal secretion that in such cases a correct diagnosis can be arrived at. Great diagnostic value cannot be attached to the presence of elastic tissue in the sputum, for it may be present in advanced syphilitic or malignant disease, as also in chronic laryngitis in strumous subjects, particularly when the epiglottis is implicated. I show you, for example, a case of chronic laryngitis which has been under observation for nearly three years. Here there is no lung affection, the symptoms are entirely local in character, and the complaint has never incapacitated the patient from following his occupation. Now there is no sputum, but from time to time elastic tissue has been expectorated, a micro-photographic specimen of which I now show you. So far as I could make out, this tissue came from the epiglottis. In this case the presence of elastic tissue in the sputum has been of singularly little help, alike in regard to diagnosis and prognosis.

It is otherwise with the bacilli of tubercle. Their presence in the sputum indicates the existence of tubercular disease of the larynx or lungs, or both. When they co-exist with what appears to be a chronic laryngitis, I would anticipate that the laryngitis was already, or would shortly become, tubercular. For, of course, the bacilli may have come from the lungs, and the larynx may be but simply chronically inflamed. Still, under such circumstances, the probability is that this condition of chronic inflammation of the larynx would form a suitable nidus for the settlement and development of the bacillary spores in their passage by expectoration from the lungs. We know the unfavourable character of a laryngitis supervening during the course of pulmonary tubercular disease; how difficult it is to get this to clear up satisfactorily, and the great risk there is of the development of genuine "throat consumption." If under such circumstances tubercle bacilli be present in the sputum, or if they can, in the manner I have already demonstrated to you, be, as it were, "fished out" of the larynx, the disease present in the larynx is of a tubercular nature. I have made various observations in this direction, and have never been able to draw bacilli from the larynx, even when they were known to be present in the lungs, unless the larynx itself was the subject of tubercular disease.

The formation of new growths is another of the sequelæ of chronic laryngitis. It does not fall within the scope of the present lecture to describe in detail the microscopical characters of these neoplasms, or to attempt to lay down for them a system of classification. In their intimate structure they follow the universal law governing the development of tumours, of resembling the parent tissue from which they spring. According to their seat of origin, therefore, they may be papillomatous, mucous, fibrous, or cartilaginous.

In tracing the course of a simple chronic laryngitis into the domain of distinct tumour formation, it cannot be affirmed that, so far as the symptoms are concerned, there is any single characteristic sufficient to indicate that the boundary line has been passed. The earliest symptoms are simply those which we have seen present in the severe forms of chronic laryngitis in a more or less exaggerated degree. These depend principally upon the number, size, and situation of the growths, upon the extent to which they interfere with the approximation and vibration of the vocal cords, or occlude the respiratory passage. Thus a growth may produce slight roughness, hoarseness, or complete loss of voice; it may scarcely, if at all, impede the respiration, or it may occlude the windpipe to such an amount as to necessitate the performance of tracheotomy. By the symptoms alone, therefore, one cannot judge with accuracy as to the condition of the larynx in these instances, or indeed in any case of intra-laryngeal disease. In order to attain accuracy of diagnosis, recourse must be had to the laryngoscope, the use of which is alone capable of deciding whether we have to do with simple chronic laryngitis or with one of laryngeal growth or tumour.

It is impossible to arrive, with any degree of accuracy, at the causes which determined the course of a chronic laryngitis,—whether it remains simply such, undergoes the tubercular degeneration, or ends in the formation of distinct growths. It occurs to me that the less the degree of chronicity the less is the probability of grave sequelæ. On the other hand, the more chronic the case the more likely is the supervention of the most serious of all the sequelæ, the tubercular degeneration, a result which may be helped by the presence of a constitutional tendency to the disease. It goes without saying that the greater the tendency to localization of the inflammation at certain areas or spots within the larynx, the greater is the tendency to new growth formation.

I have already remarked that all the specific inflammations of the larynx are accompanied by more or less chronic laryngitis, which occasionally tends to obscure the true laryngoscopic characters. At certain stages, indeed, so close may be the resemblance between simple chronic laryngitis and tubercular, malignant, or syphilitic disease, that it may pass the wit of man to say, by simple inspection of the larynx, what is the nature of the malady. We have already seen how simple laryngitis may be distinguished from tubercular disease, and the same means, the microscope, must be used to identify malignant disease. Malignant laryngeal disease, both in its earlier and its later stages, presents, in the majority of instances, sufficient characteristics to lead the experienced observer at least to suspect its presence, but occasionally that is not the case. As I shall have occasion to point out in my lecture dealing with the subject, in all cases of suspected malignant disease it behoves the observer to make a careful microscopical examination of the neoplasms. Pieces of these sufficient for the purpose may be found in the sputum, or portions may be artificially removed by means of forceps. But even with pieces spontaneously or artificially detached it is necessary for the observer to be on his guard, for occasionally these may present simply the characters of inflammatory or granulation tissue. I show you under the microscope portions of tissue from a case of laryngeal carcinoma, having these simple characters—such as one might expect to meet with in simple chronic laryngitis. It seems to me that this is distinct evidence as to the accuracy of what I have asserted—that chronic laryngitis is not only an important disease in itself, and by reason of its sequelæ, but also by its complicating and obscuring the character of the graver laryngeal lesions.

In regard to the treatment of chronic laryngitis, it will be readily seen that, to be effective, this must be essentially of a local character. Physicians are, however, still to be found who pin their faith to general remedies, and by devoting their attention to the condition of the bowels, the stomach, or the liver, neglect to assign even a subordinate place to what is essentially a local disease. It is difficult to see by what process an easily-recognised and well-marked thickening of an organ can be removed or reduced by the action of aperients, tonics, or chalogogues, and as a matter of fact such never occurs. It would, in short, be quite as reasonable to expect this line of treatment to reduce a chronically thickened pleura as to restore a vocal cord, similarly affected, to its normal proportions. Nor is climatic treatment by itself one whit more efficacious. Precise local treatment is the great desideratum, carried out, as you have already seen, by means of inhalations, sprays, powders, or pigments. In well-marked chronic laryngitis it is a perfect waste of time to toy with the milder class of remedies, such as inhalations, sprays, and powders: recourse should be had to pigments, and of these nitrate of silver is the best. Commencing with a solution of 30 grains to the ounce of distilled water, you ought gradually to increase the strength by additions of 30 grains every ten to fourteen days, to 120 grains to the ounce of water, or even more, according to the amount of success achieved. These pigments ought to be applied locally by means of a laryngeal brush, under the guidance of the laryngoscope, at first three times, and subsequently twice weekly, and the period of treatment ought to extend over several months. I show you, for example, a case which has been under this treatment for nearly six months. The patient was sent here by Dr Moir, George Square. She had marked thickening of both vocal cords, which were red and fleshy, with granulation-looking projections. There was slight inspiratory dyspnœa and whispering aphonia. Although nothing definite could be detected in the chest beyond a few rather moist bronchitic sounds, I did not like the laryngoscopic appearances on account of the possibility of degenerative changes having commenced; but careful repeated examination of the sputum having failed to reveal any trace of tubercle bacilli, we persevered in treating the case as one of simple chronic laryngitis, with the result that the dyspnœa has completely disappeared, the normal voice has returned, and a slight redness of the vocal cords is all that remains. The case is an example of the persistence and steadiness in local treatment necessary to success; for the progress of all such is necessarily slow, and several months usually elapse before recovery takes place. I need hardly add that the avoidance of all causes of laryngeal irritation, such as alcohol and tobacco, should be strongly insisted on.

This energetic line of treatment ought, of course, to be adopted only in cases with well-marked alteration (thickening) of the vocal cords or intra-laryngeal mucous membrane. In the chronic laryngitis which we have seen to be dependent upon chronic nasal catarrh, the thickening of the cords is seldom so marked as to necessitate the use of the nitrate of silver. Attention ought to be bestowed upon the nose, for if the treatment be directed to the larynx alone, it is bound to be ineffective. The nasal passages ought to be frequently cleansed by means of a solvent spray (one teaspoonful of the bicarbonate of soda to the pint of water), and immediately thereafter an astringent solution ought to be applied in the same way, the best astringents being the sulphate of zinc or acetate of lead, 1 to 2 grains to the ounce of water. At the same time the pharynx and larynx ought to be stimulated by occasional applications of a pigment of chloride of zinc of the strength of 20 to 30 grains to the ounce of water. In granular pharyngitis the application of London Paste, or of the galvano-cautery, to the prominent follicles, is usually necessary. Cough and gastric disturbances may sometimes be mitigated by the administration of alkalies, for the reasons already stated in speaking of the stomach as a factor in cough-production.

When chronic laryngitis has ended in the formation of distinct growths, it is quite futile to attempt to influence its course by a continuation of the local treatment as already described. Recourse must now be had to intra- or extra-laryngeal surgical measures, of which the former, when skilfully effected, are alike the safest and most effective. These intra-laryngeal measures depend upon the principle of removing the growth without external incision, and are carried out by means of various instruments, such as the hollow bougies of Schrœtter, or the forceps of Morell Mackenzie, who by his skilful manipulations and inventive genius has done much to perfect this branch of surgery. I would here remind you of the great advantages of the use of cocaine hydrochlorate as a local anæsthetic in intra-laryngeal surgery.

Certain of the sequelæ of chronic laryngitis may necessitate the opening of the windpipe for the immediate relief of the respiration, or for the purpose of removing such growths or tumours as from their size, situation, or sessile character, have not been suitable for intra-laryngeal treatment, or which have shown such a tendency to recur as to require more radical treatment than can be effected by intra-laryngeal means. I show you, for example, a small benign tumour of the larynx, which, with the assistance of my colleague Mr Maxwell Ross, I removed by thyrotomy from the larynx of a patient in whom comparative rapid recurrence had taken place after removal by intra-laryngeal methods. The operation of thyrotomy has, of course, the disadvantage of being a more serious operation, and of being more likely to interfere with the integrity and mechanism of the vocal cords than the intra-laryngeal methods. It ought only to be undertaken when intra-laryngeal treatment, from some cause or other, cannot be carried out, when it has failed to give relief, or when it has been followed by rapid recurrence. It may be taken as an axiom in such cases that if it be necessary to open the windpipe either for the relief of the breathing, or for the removal of the obstruction, the further removed from the vocal cords the opening is, the greater is the probability of clearing the obstruction, and the less the likelihood of interfering with the vocal functions. If, therefore, the same objects can be attained by tracheotomy, this operation is to be preferred to thyrotomy. It appears that, under certain circumstances, not only does tracheotomy relieve the breathing, but, by affording rest to the larynx, and freeing it from the irritation resulting from cough and expectoration, it mitigates the condition of chronic inflammation, and may entirely remove its results. I show you what at one time was a case of chronic laryngitis after measles, resulting in the formation of papillomatous growths on the vocal cords, in which the dyspnœa became so urgent as to necessitate the performance of tracheotomy. The tube was worn for over a year, with the result that, as you now see, respiration by the larynx is now quite free, and the voice is perfectly normal. I show you another case of lupus of the larynx,[1] in which the same method of treatment has been tried. The rest and freedom from irritation afforded by the operation has not reduced the lupoid thickening which caused the respiratory impediment; but the disease has not extended, and a certain amount of chronic inflammation which accompanied it appears to have been mitigated. It is important, therefore, to bear in mind that not only does tracheotomy relieve the urgent symptoms in such cases, but it may eventually lead to a radical cure without further operative procedures. This ought to be specially borne in mind in dealing with children, who are very intolerant of intra-laryngeal manipulations.

In regard to the treatment of chronic laryngitis with actual or threatened tubercular sequelæ, it appears to be a question for consideration whether, considering the highly unfavourable prognosis in tubercular laryngitis, and the freedom from irritation afforded to the larynx by tracheotomy, this operation ought not to be resorted to should local medication, on the lines already laid down, fail to produce favourable results. At any rate, this irritation ought to be reduced to a minimum, and to this end the local or general administration of opium ought always to be carried out.

From the foregoing remarks it will be readily seen that chronic laryngitis demands careful and energetic treatment, not only from its immediate effects upon the voice and respiration, but also by reason of its secondary results—results which are frequently of a grave and serious character, and tend to shorten the life of the individual. The risks attendant upon neglected cases of chronic laryngitis do not appear to be duly appreciated by many in our profession; for it is not unusual for one devoting special attention to this branch of practice to meet with cases which have been allowed to drift helplessly beyond the point of recovery, and in which early scientific treatment would, in all probability, have led to very different results. The responsibility attached to those practitioners who allow such a state of affairs to be brought about is very great indeed, and their offence justifies the most severe condemnation.

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[1] This and the preceding case were exhibited before the Medico-Chirurgical Society of Edinburgh on 20th May 1885.

VI.—CASE OF PELVIC ABSCESSES CURED BY ABDOMINAL SECTION.

Reported by J. MILNE CHAPMAN, Inverness.

I AM induced to publish my notes of the following case, partly on account of its intrinsic interest, and partly because it was one of the last upon which the late Dr Angus Macdonald operated.

Mrs M., aged 27, was a particularly healthy girl and young woman, whose menstrual functions were always regular and normal. She married at the age of 24, and lived ten months with her husband. During this time she missed two periods, but does not think that she was pregnant. Her husband having become insane, she took to nursing, and still enjoyed good health till 26th April 1884, when she had a severe attack of scarlet fever, lasting six weeks. During the next year she had, every four or five weeks, a severe attack of sickness and vomiting, but there was no change as regards menstruation, which continued to be regular and free from pain. In April 1885, after a very long walk, during which she had had a fall over a fence, she began to suffer from pelvic pain, and the next two periods were attended with great suffering. In the beginning of June she became suddenly feverish (102°), and had great pain in the pelvis, back, and thighs, and within twenty-four hours of the commencement of her illness signs of bladder irritation came on, micturition being frequent and excessively painful, though the urine was unaltered in any way, as proved by repeated and careful examination of it. For the pain, opiates were freely used. During the next week her temperature continued to run about 101°. The pain remained unabated. There was a good deal of sickness, but the frequency and painfulness of micturition gradually ceased. About ten days from the beginning of her illness a swelling was noticed in the left iliac fossa, and poultices were applied. For the next three weeks the temperature remained high, and the lump gradually increased in size. On

3rd July she came under my care, and the following was her condition:—She complained of severe pain deep in the groins, chiefly the right, which passed down the inside of the thighs and round into the back. The abdomen was distended, and on the left side there was a rounded mass about the size of a fœtal head, the long axis of which passed down behind the inner half of Poupart's ligament into the pelvis. On palpation, this mass was found to be tolerably uniform in contour. It measured 6 inches across in every direction, and evidently contained fluid. On percussion, there was an area of absolute dulness over the central portion of the mass, 3 inches in diameter, which passed down into the pelvis by a neck of about 4 inches in breadth. On vaginal examination, the cervix was found high up in the pelvis and towards the left side, and its direction was downwards and forwards. The mass already described was closely connected with the side of the uterus, and the two could not be moved separately. Behind, and slightly to the right side, there was a rounded, soft, irregularly-shaped body, apparently about the size of the closed fist. This I took to be the body of the uterus, but, on using the sound, the direction of the uterine cavity was found to be upwards and forwards, towards the left. On 4th July I aspirated the abdominal mass in the iliac fossa, and removed 30 ounces of fluid, 3 or 4 of which consisted of pus, the remainder of straw-coloured serum. For a couple of days after this there was somewhat violent reaction, but thereafter the temperature fell to 99°, but her condition was otherwise unaltered. She still had severe pain in the right side. On vaginal examination, almost nothing could be felt in the situation of the previous left side tumour, but the mass behind and to the right of the uterus was much more easily defined, and was found to be closely adherent to the side of the uterus and to Douglas's space, which it fully distended and bulged down to a level slightly below the outer os. Its size was found to be somewhat greater than had previously been supposed, and it, too, evidently contained fluid. During July there was on several occasions a discharge of pus per vaginam, and twice a small quantity of pus was noticed in the stools.

In the end of that month I aspirated per vaginam, and removed 16 ounces of pure laudable pus. The temperature fell to slightly subnormal, and her pain was relieved for a few days, but then returned as severely as ever. Dr Angus Macdonald saw her on 25th August, and examined her under chloroform. On each side of the uterus there was found to be an irregular, sausage-shaped accumulation of fluid, that on the left side being the more diffuse, and passing behind the uterus into Douglas's space.

On 26th August abdominal section was performed by Dr Angus Macdonald. The removal of the tumours was attended with very considerable difficulty, owing to the almost universal adhesions which had been formed, and to the way that the right side one had opened out the broad ligaments, and, so to speak, burrowed under the parietal pelvic peritoneum. The left side was freed from adhesions, pulled well out, and secured in the Staffordshire knot. The right side mass burst in the handling, and a small quantity of purulent fluid and curdy masses escaped. This was carefully sponged away, and the sac enucleated from its bed beneath the peritoneum. Several portions of tissue and two or three bleeding points were tied, a glass drainage-tube put into the lower angle of the wound, and the operation was over, having lasted one hour and fifty minutes. When the patient was placed in bed, at a little after 1, her temperature was 96°; by 6 P.M. it was normal; and from then onwards it remained so—99° at 7 P.M., and 99°·4 at 8 and 9, being the highest readings throughout her whole convalescence. During the first twenty-four hours about 3 ounces of blood-stained fluid came away, and was removed through the tube, and on the evening of the second day the tube was withdrawn. She had then retention of urine, which necessitated the use of the catheter till the seventh day after operation, when a complete ligature, knotted, was passed from the bladder, and she recovered the power of voiding urine. For a week after this she had a smart attack of cystitis, and the urine contained a very large quantity of ropey mucus, and on several occasions small shreds of silk were passed. By the end of the second week after operation this had all quite subsided. Two and a half days after the operation a slight hæmorrhage occurred from the vagina, which lasted three days. One month after the operation she had all the signs of an ordinary menstruation, and these have regularly recurred. At the end of the fourth week she left her bed, and a fortnight thereafter went to the country, and since then she has enjoyed the best of health.

Generally speaking, the parts removed consist of a thickish-walled cyst of irregular shape, with—situated in the wall and attached to it—portions of true ovarian tissue and portions of comparatively healthy tube. The normal relationship of the structures contained in the broad ligament is completely lost, and the general confusion is rendered all the greater by the presence of much new material thrown out around the original cysts, the result of local peritonitis.

In tracing the etiological history of this case, I would first premise that Mrs M. was quite healthy as regards her pelvic organs up till the time of her scarlet fever attack in April 1884. That during this attack there was probably a catarrhal condition of the genital canals, as is very often the case during the exanthematous fevers, and that this led to the formation of adhesions in the interior of the Fallopian tubes. During the next year she tells us that she suffered from nearly monthly attacks, which she terms bilious, but which more probably were associated with an intermittent condition of pelvic peritonitis. At any rate she would appear to have had a somewhat acute attack of this trouble as a result of her long walk and fall in April 1885, and from this date her troubles assumed a graver form. Then as to what brought on the acute attack in June, all that she can herself blame is a strain over a heavy weight during the performance of her duty. As to what happened then there can be no doubt. There was evidently suppuration in the interior of the cysts at the sides of the uterus. The further history is plain, and speaks for itself.

VII.—ON HOLIDAYS. PRESIDENTIAL ADDRESS TO THE CARLISLE MEDICAL SOCIETY, 11th November 1886.

By R. Maclaren, M.D., Senior Surgeon to the Cumberland Infirmary.

Gentlemen,—I have to offer you my hearty thanks for conferring on me the position I now occcupy, and to promise you that I shall do my utmost to prove myself worthy of it by using every endeavour in my power to promote the prosperity of our Society.

Since the last presidential address was delivered from this chair three new members have been admitted to our ranks—Drs Helm, Henderson, and Smith. On the other hand, we have to regret many losses. Drs Henderson, Orr, Smith, and Harris of Dalston, have left Carlisle or the neighbourhood, and have consequently ceased to belong to us. Drs Maclachlan, Longtown; Tiffen, Wigton; and Rigg, Burgh, have withdrawn because unable to attend our meetings. Dr Campbell has resigned. Death has removed from among us our first president, Mr Page.

The Society consequently numbered six less at the end of last session than at the beginning, a loss which is, however, nearly counterbalanced by the valuable additions which we have elected this evening—additions which, I believe, will enable the Society to continue its hitherto successful career.

It is right and fitting, that I should in this place call your attention to the loss our profession here has sustained in the death of Mr Page. A potent influence is gone from our midst, an influence which entered somewhat into the lives of us all, for certainly few among us in matters medical could wisely disregard what Mr Page said or would do. What I have to say to you is necessarily very brief. His life's work has been excellently told in the several admirable memoirs which have appeared in the local and medical papers. It is to be hoped at some future time, and from some other hands than mine, a character so individualized, an influence which was only limited by space and time, and a success which is almost unparalleled, if we consider the circumstances in which it was achieved, may receive the study and the analysis, the balancing of the higher and the lower nature, which biography in its highest form represents. Time-honoured custom prescribes limits, which cannot be exceeded without disastrous results, to what should be said of the recently departed; but when these limits are reached, it cannot be said that the human interest of such a life as Mr Page's has been more than glanced at. In the meantime let us not forget the silent influence of a laborious life. "Whatsoever thy hand findeth to do, do it with all thy might," whether consciously or unconsciously followed I know not, was the guiding principle in everything he did. I might speak to you at great length of his sagacity, of his fine intuition in separating the real from the apparent, of his knowledge of men and his capacity for guiding them as he wished them to go, of his kindly help to many a man in difficulty, or even in disgrace, and yet be giving you but a partial view of the whole man. I therefore desist, and pass to the subject matter of my address.

In the remarks I am going to make I propose to depart somewhat from professional topics, and to ask you to listen to a few observations on holidays. I may begin by claiming to be rather an authority, for ever since I graduated an annual holiday has been an invariable custom with me, and I have had experience of all kinds, long and short, distant and near home, active and loafing, town and country, so that I am giving you largely personal experience, not the mere results of reading or a compilation of other people's experience. I am not going to look at them from the aspect of the sick man, who must have a carefully-selected climate according to his ailment; but rather from the point of view of the hard-worked man, who must have mental rest, who needs a filip to his bodily vigour, and withal a little pleasure which he has heartily deserved. There is no doubt that we work with an intensity and energy both of body and mind unknown to past generations. To put as much work as possible into as little time as possible is one of the marked characteristics of the age. It has consequently become more and more a necessity to restore exhausted energies by complete change of scene and entire cessation from work. The annual holiday is not a mere luxury, it is the logical outcome of our modes of life. This is true not only of our own occupation, but of many others, and we are often appealed to for guidance by the over-worked clergyman, the exhausted student, or the harassed man of business. Now, I would lay it down as an axiom that a considerable amount of contrast to ordinary life is an essential condition to a successful holiday. It would be little use for a man, the besetting sin of whose life is that he gets no exercise, to go for a holiday which involved sitting nearly the whole time. Yet men do it sometimes. I would have the man who lives at the seaside go to the hills, the town man should go to the country, the country man to the town, the man who leads an active, stirring life should loaf, the sedentary man go for a walking tour. There is a prevalent idea that a holiday necessarily means going to the country or the seaside; but many a man may far better get the mental and bodily rest he needs in seeing large towns, with their picture galleries and museums, their buildings with historic associations, and their amusements, provided that his daily life withdraws him from such scenes.

For two classes of men a sea voyage is an excellent holiday. First, for men under middle age who are somewhat run down by mental work and worry, who are not fit for or in need of much physical exercise; second, for spare old men, who are bad sleepers, and have healthy livers. The splendid air, the limitation of exertion, the pleasant, easy-going life of shipboard soothes the irritable brain, induces sound sleep, and gives a fine appetite. The interests of sea life are numerous but small,—watching the sea-birds or porpoises, or the way the ordinary duties of the ship are performed, guessing the day's run, and a hundred other little things, keep the mind occupied with trifles, and shut out graver worries. For men of middle age I do not think a voyage is a holiday to be recommended. The deficiency of muscular exercise and the risk of overfeeding along with it are serious drawbacks. A man gets a great appetite, and has little work to use up the food, consequently his liver suffers. Nowadays sea voyages of any length that a man wishes are open, from hours to months, and even the risk of sea-sickness can be much reduced by taking such a route as quickly runs the vessel into steady weather. Within the limits of a medical holiday you may get within the Arctic circle, or you may reach the Equator. You may go to North America or to Constantinople.

The west coast of Scotland is a convenient holiday from this, and, given good weather, it is a fine change. A walking tour, or, still better, a few weeks' fishing or shooting, anywhere north of Oban, or among the outlying islands, may be as interesting and healthful a recreation as a man can get. The fresh breezes straight from the Atlantic, the active exercise, and the charming scenery, can put a man into a fine condition of body and mind. But, unfortunately, there is a large amount of wet weather along the coast. The climate is then very like our own—dull, depressing, and relaxing. To those who come from the sunny South or the dryer East a holiday among rolling fogs and Scotch mists may be very healthful, but not for us. We need something brighter and more bracing than we usually have. I believe people go to the West Highlands at the wrong time. June is usually a dry, bright, pleasant month. July, August, and September are apt to be rainy and damp. Early winter is very nice in that region. One of the most invigorating holidays I ever had was a week in the beginning of November spent in walking from Tyndrum to Kingussie, going by Glencoe and Fort-William. The air was crisp, the weather bracing, and the autumn tints still lingered in the foliage. The further north one goes the more bracing is the climate, and the very north of Scotland and the Orkneys have this quality in a very marked degree; but still there is the drawback of a large rainfall and often a moisture-laden atmosphere. The centre of Scotland is decidedly drier than the west coast, and the east coast both of England and Scotland are still more so. All of these have climates which give an excellent change from this. They are bracing and much more sunny. They are, however, much less interesting than the west. The scenery is inferior in magnificence, and there is wanting the mental influence of bold peaks, of far-reaching sea lochs, and of the desolate grandeur of the wild corries, the homes of the red deer and ptarmigan.

When the time comes, as come it must to all men who live out their natural life, when activity is diminished, when the vessels are not so reliable as they once were, when the liver and kidney functions are performed with some difficulty, a holiday at a German spa is one of the best possible. The dry, exhilarating climate, the bright sunshine, and the mode of life unite to rest and gently invigorate body and mind. An old traveller says: "On reaching the point of his destination he found not only water-bibbing, bathing, and ambulation to be the orders of the day, but it was, moreover, insisted upon that the mind was to be relaxed inversely as the body was strengthened." The average life at a German spa is as follows:—You rise between 5.30 and 6 A.M., get out as soon as possible, drink sundry tumblers of water to the sound of a German band, then gently promenade till breakfast between seven and eight. After breakfast an hour or two is spent in strolling about having a morning pipe or some similar light occupation. Then comes the serious work of the day, the bath. This is taken with great deliberation; the length and temperature have been carefully decided on beforehand, and the feelings and sensations produced by it are sedulously noted, if for nothing else than that they may form a subject of after-dinner talk, when symptoms and effects can be compared. After the bath comes a short rest, with perhaps more tumblers of water. About one comes for English people lunch, for Germans dinner. The afternoon is often spent in seeing the neighbourhood on foot or by driving. Then there may be more water; and about seven comes the English dinner, or German supper. After this there is usually some entertainment—music, concert, or dance—and, finally, bed by 10 P.M. The drinking of the waters and the bathing are subject to many variations, according to the custom of the place or the fancies of its physicians. The sum total of this kind of life is moderate exercise, light food, early hours of going to bed and rising, a free clearing out of kidneys and bowels, and a nice, bright, social life.

But of all holidays, I look upon a Swiss one as far the best from here. The contrasts are highly marked. We are near the sea level; Switzerland is high—even the big towns are high: Basle, 871; Zurich, 1351; Lucerne, 1437; Geneva, 1243. We are on an island; Switzerland is near the centre of Europe. Our climate is characterized by its moisture; its is dry. We have many sunless days; it few. Though much hotter than this country, it is yet so much more bracing from the high dry air, that exercise can be taken at least as freely as here. The contrasts in mode of life are equally great. You go to bed at ten; rise about six. You can and ought to be in the open air day and night. The food is very different; the clothing much lighter.

In taking a Swiss holiday necessarily the question arises, How to get the most good out of it? Now, in one thing Switzerland differs from the rest of Europe, and that is in height. In other countries you may see as fertile plains; the smiling fields of sunny France have a luxuriance which Switzerland does not touch. Elsewhere you may find as noble rivers and even as beautiful lakes. The waterfalls of Scotland, though they do not approach the Swiss ones in height, in my opinion surpass them in beauty. But hardly anywhere else do you get the snowy summits, the vast expanse of snow field, and the great ice rivers which we know as glaciers. Now it seems to me that to go to Switzerland without seeing something of the aspect of life involved in climbing a few good peaks, or in a stretch of glacier walking, is to lose the distinctive advantage of the country. I have thought it might interest you to tell you something of how this is managed. To begin with, there are certain equipments you must provide: first, a pair of blue or smoked spectacles or goggles as a safeguard against snow-blindness. On the glacier they are not an absolute necessity, but on the snow with a bright sun a very short exposure, as little as two hours with the eyes unprotected, may be followed by snow-blindness; this, though a temporary condition, is of course a great inconvenience, and has, I believe, been followed by permanent impairment of sight. Then you must have a rope—60 feet is sufficient for almost all purposes. It is generally made of manilla 20 feet to the pound. Cotton makes an excellent rope; my own is of that, with a circumference of 2 inches, or nearly as thick as my thumb; its only fault is that it is rather heavy. Of the uses of the rope I will say more presently. Next, you ought to have an alpenstock or ice-axe. The latter is far and away the most useful. The shaft should be about 4 feet 2 inches long, with a steel point to give grip, and a head with a sort of adze on one side and a pick on the other. The axe is used as a staff, and it serves for cutting ice or snow steps, for a drag or anchor in case of a slip, and for a holdfast in rock climbing. Gaiters reaching nearly to the knee are required to keep the snow out of the boots; and gloves to protect the hands from the intense cold of the higher regions. Lastly, plenty of provisions, considerably more than you expect to consume, should always be carried. A number of other things, such as nailed boots, drinking cup, and compass, will occur to any one who is accustomed to mountain walking, but I need not give further detail, as they are common to this kind of walking everywhere.

(*To be continued.*)

VIII.—CLINICAL AND PATHOLOGICAL MEMORANDA.

y BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; Additional Examiner in Clinical Medicine in the University of Edinburgh, etc.

XI.—*Glioma and Cyst of the Left Frontal Lobe, with extreme Hyaloid Degeneration of some of the Bloodvessels of the Tumour.*

ON the 16th of October 1884 I was asked by Dr Foulis to see a single lady (Miss A.), aged 47, suffering from headache, vomiting, and partial loss of motor power in the right arm and leg.

At the age of 12 the patient had suffered from cerebral symptoms, the exact nature of which could not be definitely ascertained, but which were said to be due to "water on the brain." From this attack she had perfectly recovered, and had been an extremely intelligent, bright, and active-minded woman.

Ten years before the present symptoms commenced she had, after severe mental trouble and anxiety, another cerebral attack—a fit of some kind or another—attended with loss of consciousness, loss of speech, and marked rigidity of the limbs; the rigidity and speechlessness lasted for five days, during which time she was confined to bed. From this attack she had also (apparently) perfectly recovered, though her friends were conscious of a distinct difference in her mental condition, and had enjoyed good health until a little more than a year before I saw her.

At the age of 45, when menstruation ceased, she became anæmic, and began to suffer every now and again from attacks of headache and vomiting. The headache was sometimes very severe, and always limited to the left side of the head; in the earlier periods of her illness it was apparently neuralgic in character, and very definitely located over the area of distribution of the great occipital nerve. For some time before I saw her the pain was chiefly felt in the left frontal and parietal regions.

The headache often occurred without the vomiting, but the vomiting was always associated with headache.

Under treatment the anæmia improved, the headache and vomiting became less frequent and less severe; but during the next few months she had several pseudo-apoplectic attacks which resembled a deep sleep, and in which she remained insensible for many (in one instance for twenty-four) hours at a time. One of these attacks occurred when she was in her bath. When seen by Dr Foulis shortly after the commencement of the coma she was completely insensible, the eyes suffused, and the temperature 105° F. During these attacks the contents of the bladder and rectum were evacuated involuntarily. The attacks of coma were never, so far as could be ascertained, preceded by a convulsion, and were not followed by any appreciable localized loss of motor power.

Some four months before I saw the patient, distinct loss of motor power had been occasionally noticed in the right arm and leg. The paralysis was never complete; it varied in degree from time to time, and would sometimes completely disappear.

A few days before my visit there had been distinct loss of power on the *left* side of the face (*i.e.*, on the opposite side to the paralysis of the arm and leg), and considerable difficulty in swallowing and articulating.

When seen by me on October 16th, the patient looked fairly well when lying in bed, though somewhat pale and anæmic. She could stand and walk, but with difficulty. After getting out of bed she looked very shakey and very ill, and the want of attention, vacant expression, and evident want of the power of mental concentration, which were very perceptible when she was lying in bed, became now much more marked. She seemed dazed, but said she was not giddy. Her movements were markedly unsteady, apparently the result of motor weakness rather than of inco-ordination. When standing she seemed very insecure, and it was noticed that the head tended to fall to the right side; this was particularly marked when she was seated in a chair having the eyes examined.

There was very decided loss of power in the right arm and leg; and voluntary movements of these (the paralyzed) parts were attended with a marked coarse tremor, which exactly resembled the tremor of multiple cerebro-spinal sclerosis, and which, it is well known, may result from pressure on motor conducting fibres.

The *left-sided* facial paralysis which had been noticed a few days previously had disappeared; the motor power in both cheeks seemed feeble, but I was unable to satisfy myself that there was distinct localized paralysis on either side.

The tongue was protruded in a tremulous manner, and its tip, when protruded, seemed to be slightly turned to the right side.

There was marked difficulty in swallowing both solids and liquids, but there had been no regurgitation through the nose. Speech was distinctly impaired, apparently from slowing of articulation; there did not at this time, so far as could be ascertained, appear to be any definite aphasia.

The knee-jerk was lively on the left, but very feeble on the right (paralyzed) side; the plantar reflex was lively on both sides, but more marked (extremely active) on the left.

There was no apparent loss of sensibility; sight and hearing seemed perfect; the pupils were active, small, and contracted; ophthalmoscopic examination (which was made with difficulty at the first visit, owing to the small size of the pupils and the inability of the patient to keep the head steady and in the erect position, but which was most satisfactorily accomplished on November the 8th, when the patient was a great deal better) showed that there was no optic neuritis; both discs were deeply cupped, and perhaps rather too gray in colour, the edges well defined, the vessels of normal size; the sclerotic ring on the inner side of the left disc was very prominent, and a small white patch, very like one of the white spots seen in albuminuric retinitis, but in all probability the result of a previous hæmorrhage, was present on the inner side of the right disc. (Dr Barlow, who had seen the patient some months previously, had found some changes in the right disc, to which I will presently refer in detail.)

All the cerebral functions seemed slow and dull; but, so far as could be ascertained, there were not, at the time of my visit, any positive derangements of the mental and intellectual faculties. Both Dr Foulis and the patient's relatives had, however, on several previous occasions noticed marked evidence of intellectual failure (rambling and incoherence of speech, nonsensical talk, the erroneous use of words and expressions, impairment of memory, and marked loss of the power of attention).

Percussion did not seem to cause more pain over the left parietal and frontal regions than over the other portions of the cranium.

The urine had been repeatedly examined by Dr Foulis, and had always been healthy. There was no evidence of disease in any of the thoracic or abdominal viscera.

Diagnosis.—After careful consideration it was concluded—(1.) That the patient was suffering from an organic intra-cranial lesion; (2.) That, while the symptoms might be due either to a cerebral tumour or localized and progressive softening, the balance of evidence was very strongly in favour of tumour. A decided opinion in favour of tumour was, therefore, expressed to the patient's friends.

The exact localization of the lesion presented very considerable difficulty. The right-sided character of the paralysis showed, without doubt, that the lesion was situated on the left side of the brain; while the presence of coarse tremor in the paralyzed limbs, and the intermittent character of the paralysis and tremor, were strongly suggestive of pressure on the motor (pyramidal) tracts, rather than of a lesion directly involving and destroying the motor conducting fibres or the motor centres.

The fact that the *left* side of the face had been paralyzed was very strongly suggestive of a lesion involving the left side of the pons Varolii, and pressing upon the fibres of the pyramidal tract, going to the right arm and leg above its decussation in the medulla and on the trunk or fibres of the left facial nerve after their decussation in the pons. And that the lesion was situated far back in the neighbourhood of the pons or medulla seemed further confirmed by the marked difficulty in swallowing, by the character of the articulatory disturbances which were present at the time of my first visit. Further, the fact that in the earlier stages of the case the pain was limited to the back of the head, and most distinctly localized in the course of the great occipital nerve, seemed to favour this view of the position of the tumour.

The facts did not seem sufficient to warrant an opinion as to the pathological nature of the lesion.

Accordingly, when writing the same evening to Dr Barlow, who was interested in the case, I stated that I had no doubt that there was organic disease; that I was strongly in favour of a tumour rather than of softening; that the localization of the lesion was a matter of difficulty; but that, for the reasons which have been given above, I was inclined to think that it was situated far back, and was probably exerting pressure upon the pons Varolii. At the same time I stated that the mental defects, and I should have added (but I am not sure if I mentioned this point or not), the localization of the pain to the left temple, were suggestive of a lesion of the higher cerebral centres. I therefore suggested the possibility of a double lesion.

In answer to this letter Dr Barlow wrote me:—"She must have gone down rather badly since I saw her, but your view quite coincides with mine—at least so far—that I thought the tumour was far back and low; and I thought it probable some of the pareses were indirect from pressure rather than involvement; further than that I could not venture. I satisfied myself about the right eye, that there was a little blurring of the edge of the disc and covering over of veins; but I have seen several times now an intercurrent neuritis which has cleared up, so that I am not surprised now that you find *nil* there. I must say, like yourself, the sum total of the case very strongly seems to me in favour of tumour rather than of softening."

As regards treatment, it was agreed to give iodide of potassium in as large doses as could be satisfactorily borne.

Subsequent Progress of the Case.—For two or three days there was no improvement; in fact, the condition was worse. On 17th October Dr Foulis wrote me:—"Miss A. has been in a very sleepy state since yesterday morning. She can be roused, and will speak to you if you ask questions; but her answers are not correct, wrong words being used. The temperature yesterday was 100° F. This morning the face is flushed. She complains of choking sensations in her throat, and has more difficulty in swallowing. After two or three attempts a violent cough comes on, which gives rise to *agonizing* pain in the *left* of the head.

On the evening of the 18th a blue pill, followed by a saline draught, were prescibed by Dr Foulis; and the free purgation which was thus obtained was followed by marked improvement, which steadily continued.

When next seen by me, on 8th November, she looked very much brighter and better, and was not so pale and anæmic. She had, on the morning of my visit, had a little headache (left-sided and frontal), the first since the improvement began; it was apparently caused by getting up and walking about the room. The difficulty in deglutition had almost completely disappeared; the paralysis and tremor in the right arm and leg were scarcely perceptible; the knee-jerk was now about equal on the two sides; the mental and intellectual faculties were much clearer; the head no longer drooped to the right side; there was no evidence of left-sided facial paralysis; the tongue was slightly furred; the nurse thought the patient was thinner. To continue the iodide; to repeat the blue pill and saline draught occasionally; and to keep very quiet.

The great improvement which had resulted from the free purgation, and perhaps from the use of the iodide, was very remarkable; and although I saw no reason to modify my opinion as to the presence of an intra-cranial tumour, the continued absence of any left-sided facial paralysis, and the almost complete subsidence of the difficulty of swallowing, threw very grave doubts upon the localization of the lesion which seemed previously indicated; in fact, I now felt disposed to give up the view that the tumour was pressing upon the pons Varolii.

After this date I did not see the patient again during life, but I learned from Dr Foulis that the progress, though interrupted by temporary periods of improvement, was on the whole steadily from bad to worse; until, finally, death took place on March 19th, 1885.

Dr Foulis has very kindly furnished me with the following notes, which give a much more detailed account of many of the points in the clinical history than I have been able to do:—

"Miss A. consulted me at the end of the year 1883. She complained of severe neuralgia at the back of the head, on the left side. The pain was shooting in character, and seemed to be connected with the great occipital nerve. In appearance she was pale and anæmic. Her expression was emotionless and dull. She did not complain of any want of sensation or muscular power on one side or other. The pupils were equal in size, and responded freely to the action of light. It seemed to me at the time that all her suffering was caused by her very anæmic condition. I therefore prescribed iron and arsenic, with good food and rest.

"I saw her two or three times after this at the beginning of the year, early in January 1884, and, although the anæmia was less, the pain in the region of the great occipital nerve was more intense. I noticed that the glands of the neck on the posterior border of the sterno-mastoid muscle on the left side were enlarged and tender to the touch.

"On the 22nd January 1884 I was sent for at night to see her at her own home. I found her in bed, sleeping so deeply that shouting in her ear and pinching her violently failed to waken her. The limbs that were severely pinched were drawn away slowly, and a slight frown, expressive of pain, was seen on her forehead. The eyelids were nearly closed. The eyeballs were congested, and could be freely touched without causing the eyelids to wink. The pupils were not contracted, and answered the stimulus of light. She was breathing deeply, in a sighing manner; the face was flushed, and covered with perspiration. The temperature in the mouth was over 104° F., while the pulse was 116. On hearing from her friends that she had been suffering from constipation for a few days past, and as there were no one-sided symptoms of muscular or sensory paralysis, I ordered her to have a large dose of castor oil, in the hope that its free action would relieve the cerebral congestion.

"On seeing her next day, I heard that she had slept deeply for twenty hours, and that as soon as the castor oil had acted freely she began to revive, and shortly afterwards became quite conscious, but had no recollection whatever of what had occurred the previous night. For some weeks after this I saw her frequently. The pain in the back and left side of the head never left her, day or night. She was sometimes sick and vomited her food. There was marked constipation at all times, which necessitated the use of aperient medicine. At times the pain in the head was agonizing, but was always relieved after a free action of the bowels. It was noticed that she now occasionally made use of wrong words in conversation, and she introduced persons and ideas quite unconnected with the subject of conversation; of this she was quite unconscious. Her friends now reported to me that my patient had fallen asleep in a bath in the house of a relative, but this sleep did not last for more than a couple of hours. About this time it was observed that her right arm was deficient in muscular power, and that in walking she fell away to the right side. She could not squeeze so well with the right as with the left hand, and on raising a cup of tea to her mouth the cup shook very much and was in danger of falling. She joined in conversation on all subjects, but frequently made mistakes without being aware of it. At times there was a difficulty in swallowing, and the bladder sometimes failed to retain the urine.

"On the 5th May she had another very extraordinary sleeping fit, accompanied by fever and profuse perspiration. This comatose state lasted for quite twenty hours, and was put an end to by a large dose of aperient medicine as already described. After this, for some weeks, she decidedly improved in every respect; so much so, that she was able to accompany her friends to Moffat at the beginning of summer. On the arrival of the train at Moffat she appeared to be very drowsy, and as soon as she reached her house she fell into a deep sleep, from which she did not wake for twenty-four hours. She was seen by a local medical gentleman, who gave her the usual large dose of aperient, and it was followed by complete relief from all anxious symptoms, as on former occasions. She remained several weeks at Moffat, during which time she had two or three sleeping fits, as above described. In general condition she was not worse when she returned to Edinburgh at the end of summer. The pain in her head still continued very severe, and it was quite evident that she was duller in her mental condition. Her expression was now decidedly emotionless, but she was fairly well nourished, and her anæmia had quite disappeared.

"Towards the end of July she was seen by Dr Barlow in consultation with me. He expressed the opinion that there was a tumour growing in the brain, but did not speak definitely as to its localization. In the middle of October she was seen by Dr Byrom Bramwell with me in consultation, who examined her very carefully, and as the result of that examination he diagnosed a tumour, and stated the grounds on which he localized the new growth. To relieve the pain in the head it was decided to give her ten-grain doses of potassium iodide three times daily. This was followed with such relief to the pain in the head and to all other urgent symptoms that her friends began to hope that she was going to get better; but at the end of three weeks' trial we were obliged to give up the potassium iodide, as it produced such general weakness, and it at last lost its power in relieving the headache. In one of her deep sleeping fits, I found that a blue pill followed by a saline purge in the morning gave her marked relief from all her suffering, and this treatment was continued for some weeks, but, like everything else, it at last failed, and all the symptoms got gradually worse. The pain in the back and left side of the head was now at times quite agonizing. She frequently vomited her food. She had great difficulty in masticating and swallowing. Violent fits of coughing came on as the result of crumbs of bread or other food going down the wrong way. She suffered intense pain in her head during the fits of coughing. She was now very apathetic and listless. There was decided motor and sensory paralysis on the right side, and her urine often came away involuntarily. A bed-sore appeared on her back, and she was now placed in bed on a water-bed. She was seen by another gentleman in consultation with me, who also diagnosed a cerebral tumour, but localized it differently from the other consultants. It was now necessary to feed her on liquid food, as she could not masticate. She could speak in answer to questions, but with great difficulty, and only in a whisper. Her pulse was generally about 96, while the temperature reached about 100° F. at night-time.

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"At the beginning of the year 1885 she improved in general condition so much that she was able to get out of bed, and sat in a chair, and actually received some of her friends to tea. After being in such a serious condition in December 1884, it seemed almost a miracle that she could leave her bed in January 1885. With a little support she could rise out of her chair and walk a few yards, though it was quite evident there was great muscular and sensory weakness in the right limbs. Her powers of conversation greatly improved, so that she could carry on a little chat with those around her.

"This improvement, however, did not last for more than a few days, and as the urgent symptoms gradually returned, she was replaced in bed on the water-bed. From the end of January on to the 19th March, when she died, her condition may be simply described as one of right-sided paralysis with aphasia.

"About a month before she died the pupils of her eyes were moderately dilated, and did not respond in the least to the stimulus of a strong light. Her power of mastication was now quite gone, though she gulped down liquids after they were poured into her buccal cavity. Urine and fæces escaped involuntarily. She gradually became deeply unconscious to everything around her, and day by day, as the temperature and pulse rose, she became weaker and weaker, till she died exhausted on the 19th March. For the last week or ten days the temperature varied from 100° F. to 104° F., and her dying hours were of extraordinary duration."

(To be continued.)

Part Second.

REVIEWS.

A System of Practical Medicine by American Authors. Edited by WILLIAM PEPPER, M.D., LL.D., Provost and Professor of the Theory and Practice of Medicine in the University of Pennsylvania, assisted by LOUIS STARR, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Volume IV. and Volume V. London: Sampson Low, Marston, Searle, & Rivington: 1886.

THESE two volumes bring this admirable work to a close, and fully sustain the high standard reached by the earlier volumes; we have only therefore to echo the eulogium pronounced upon them.

The fourth volume deals with the Genito-urinary, Muscular, and Cutaneous systems, and has sections devoted to Medical Ophthalmology and Medical Otology. We must confess to some regret that in a work of this kind so little space has been allowed for diseases of the kidneys. The total number of pages in the five volumes is about 5600, and of these only 120 are devoted to the whole urinary system. Considering the vast importance of the subject, this space is quite inadequate, and as a result we find that the contribution dealing with Bright's disease is by no means on a level with the previous articles, inasmuch as little is said of the recent work done on the pathology of the various phases of the disease. Those sections of urinary diseases which have been written by Edes and Tyson are, as might be expected, in every way very excellent, but too short; it is to the part dealing with diseases of the parenchyma that we take exception, as quite insufficient on account of the attempt to compress it within too short compass.

With the section devoted to diseases of the uterus we are incompetent to deal, and we would only remark, in passing, that it is gratifying to remark that the recent work done by the Edinburgh School meets with hearty recognition.

For convenience, Myalgia, Progressive Muscular Atrophy, and Pseudo-hypertrophic Paralysis, are placed in this volume instead of with Nervous Diseases. They are capital articles in every way, well up to date, and exhibiting traces of individual thought. If it be not invidious to do so, we should like especially to notice the article on Pseudo-hypertrophic Paralysis by Dr Mary Putnam Jacobi as a model of lucid exposition and concise description, based upon perfect acquaintance with the literature of the subject.

When we say that the section on Diseases of the Skin is written by Duhring and Stelwagon, it will at once be understood that it is a very capital essay. It follows in the main the classification now adopted in America, and is in every way quite on a level with the high standard of the work as a whole.

The two articles on Medical Ophthalmology and Medical Otology, by Norris and Strawbridge respectively, are succinct treatises on the relations of eye and ear symptoms to medicine.

The fifth and concluding volume is simply a large and admirable treatise on the diseases of the nervous system, and amongst the contributors to it are many writers who have made their mark as exponents of nervous affections.

The first hundred pages are devoted to two essays by Sequin on the Semeiology, Diagnosis, and Localization of Nervous Lesions, and, as may be expected, they are in every way worthy of their gifted author.

The essay by Folsom on Mental Diseases is an admirable compendium of modern views on insanity. It is interesting to notice that its author is of opinion that "a comprehensive system of State supervision of the insane alone provides the proper protection for the insane." We hope some one will bring this subject before the author of *Triumphant Democracy.*

Hysteria, Hystero-epilepsy, Catalepsy, and Ecstasy are written by Mills, who also contributes the section on Progressive Unilateral Facial Atrophy, and (in conjunction with Lloyd) the essays on Tumours of the Brain and Spinal Cord. These parts of the work are marked by intimate acquaintance with the literature of their subjects as well as original observation, and the two articles on Tumours are about the most complete in the volume.

Wood discusses with his wonted acumen and lucidity the subjects Neurasthenia, Affections caused by Heat, and Syphilitic Diseases. The former affections, so common in America, give the author an opportunity, which he has fully taken advantage of, to lay down excellent lines of treatment for this modern malady.

Lyman's excellent essay on Sleep and its Disorders is in great part a condensed version of his interesting book, and in this article he adheres to the views regarding the cause of sleep which he previously announced. "Sleep, therefore," he says, after mentioning Mosso's researches on the circulation of the brain, "is the cause, rather than the consequence, of the so-called cerebral anæmia which obtains in the substance of the brain during repose."

Sinkler writes the sections on Headache, Tremor, Paralysis Agitans, Chorea, and Athetosis, all these being useful contributions.

Vertigo, which is from the pen of Weir Mitchell, receives, as might be expected, careful and adequate treatment from a scientific as well as clinical point of view, and every aspect observed in modern times is clearly discussed.

Local Convulsive Disorders and Epilepsy could not have been confided to the care of a better author than M'Lane Hamilton, who writes with full knowledge, clinical and historical, of his subjects.

The Neural Disorders of Writers and Artisans is a most interesting essay by Lewis, and Disorders of Speech, by the same author, is a clear, but far too short, attempt to give a comprehensive and succinct account of such affections.

Connor gives a readable abstract on Tetanus, and Wilson ably discusses Alcoholism, the Opium Habit and Allied Affections, and Lead Poisoning, entering fully into the peripheral paralyses which have of late been so successfully studied.

Minot's essays on Diseases of the Membranes, Tubercular Meningitis, and Chronic Hydrocephalus are well worthy of perusal. We cannot agree with him, however, in his opinion regarding Cheyne-Stokes respiration. He states that "in general, the variations in the rate of the respiration follow those of the pulse, though the correspondence is not always exact." From our own observations we hold the view that there is no inter-dependence, but as the respiratory and pulse symptoms arise from the same diminution of nervous energy, they sometimes coincide.

Spina Bifida has wisely been entrusted to Ashhurst, the well-known surgeon.

Spitzka, whose interesting researches on the influence of Strychnine on the Cord are well known, writes excellent articles on Cerebral and Spinal Anæmia and Hyperæmia, and on Chronic

Inflammatory and Degenerative Affections of the Spinal Cord. These are amongst the most original parts of this volume.

Hunt's short essay on Cerebral and Spinal Concussion, Edes' careful article on Hæmorrhage and other affections caused by Vascular Changes, and Schmidt's contributions on Atrophy and Hypertrophy of the Brain, Unilateral Spinal Paralysis, and Bulbar Paralysis, are in every way to be commended.

Mary Putnam Jacobi gives a very admirable essay on Infantile Spinal Paralysis. From a literary, clinical, and especially critical standpoint, we should be inclined to give this contribution the palm amongst the contents of this volume.

The articles on Diseases of the Peripheral Nerves by Miles, and on Neuralgia by Putnam, are worthy of much praise, and the concluding essay by Allen Starr on Vaso-motor and Trophic Neuroses is a most conscientious and fairly successful attempt to grapple with a difficult and obscure subject.

This volume is, on the whole, marked by more individuality than some of its predecessors, and in this aspect it is pleasing to the insular reader. All American work in characterized by industry and learning, but there is often a want of originality in the writers, and it is matter for congratulation that many of the articles in this volume are more distinguished by this quality than the earlier volumes.

We would warmly congratulate the editor and his collaborators, at the conclusion of their laborious task, on the admirable manner in which from first to last they have performed their several duties. They have succeeded in producing a work which will long remain a standard work of reference, to which practitioners will look for guidance and authors will resort for facts. From a literary point of view, the work is without any serious blemish, and in respect of production it has the beautiful finish that Americans always give their works.

On Disorders of Digestion, their Consequences and Treatment. By T. Lauder Brunton, M.D., D.Sc., F.R.S., Fellow of the Royal College of Physicians; Assistant Physician and Lecturer on Materia Medica at St Bartholomew's Hospital. London: Macmillan & Co.: 1886.

This interesting volume contains a reprint of the author's Lettsomian Lectures, along with a collection of miscellaneous essays, published at intervals during a period of thirteen years. The reproduction of the essays as well as of the lectures is most distinctly a boon to the medical reader—a boon in every way, but more particularly in this respect, that the ingenious suggestions and philosophic thoughts which abound in them strike responsive chords in the mind of the reader, and stimulate him to the exercise of his own faculties. We state a simple fact when we remark that few writers equal, and none surpass the author of this volume in the suggestiveness of his teaching.

Every one must remember the pleasure with which he perused the Lettsomian Lectures when they appeared in the weekly journals. It seemed to many that they were to be regarded as in some degree a revolt against the extravagances of the extreme dietetic school, whose victims are occasionally to be seen at table anxiously scanning an elaborate list of forbidden dainties—that school which would fain have mankind to subsist, if it were possible, on soda-water and ship-biscuit. His charming picture of an artistic city dinner, and his estimate of it as "a powerful moral agent," must be fresh in the memory of many. His observations on the use of alcohol seemed, in the main, to be most judicious, for advantages and disadvantages are impartially discussed, and in this age he has performed a useful duty, viz., reminding the medical profession of St Paul's advice to his young disciple. In connexion with this, if we may be allowed a digression into which we are tempted by the subject, we would like to mention that one of the modern terms applied to a "peg," or "nail," is "a Timothy."

The author's analysis of the processes of digestion, of the causes and symptoms of dyspepsia, and of the effects of indigestion, are in the highest degree scientific; but as these lectures have been carefully perused by the public, we forbear to dwell on them further.

The miscellaneous essays include a great many different subjects, from "How to make a Poultice," to questions involving the most abstruse points in physiology and pathology. There is not one of these that we should have missed without loss. Several have a high value as contributions to theoretical medicine, as, for instance, those on headaches, on poisons formed from food, on the structure and functions of the kidneys, and the pathology of dropsy; while others, such as those on dyspepsia, the action of fat, of alcohol, of emetics, of mercury, of purgatives, of tonics, of alteratives, and of diuretics, are of great practical importance. Distinguished by accurate observation and original thinking, these papers have been largely instrumental in moulding current medical opinion in regard to many of the subjects with which they are concerned, and in this permanent form they will no doubt continue to perform this important work.

Perhaps it is almost invidious to single out for special remark any of these excellent and instructive papers, but speaking for ourselves, we should be inclined to give the palm to the author's later essays, such as the ingenious contributions to the troublesome problems connected with headaches, or the thoughtful remarks on the pathology of dropsy, and on poisons formed from food. For assistance in the elucidation of these questions in particular, we feel ourselves to be under personal obligations to the author.

It is hardly necessary to add, in conclusion, that the style of the lectures and essays is clear and perspicuous, while it is at the same time of finished elegance. The volume is in consequence a pleasure to read, and will command wide admiration, for we may still say

"Omne tulit punctum, qui miscuit utile dulci,
Lectorem delectando pariterque monendo."

Handbook of the Diseases of the Nervous System. By JAMES ROSS, M.D., LL.D., Fellow of the Royal College of Physicians of London, and Senior Assistant Physician to the Manchester Royal Infirmary. London: J. & A. Churchill: 1886.

THIS admirable work is intended for students of medicine, and for such medical men as have no time for lengthy treatises. It may be regarded as, in some respects, a very successful curtailment of the author's larger work, and we have no doubt it will receive the same chorus of approbation which its predecessor enjoyed. It is always more difficult to shorten and compress than to lengthen and extend; and it is impossible to succeed in the former process without a well-balanced mind. In the present instance the duty of arranging the vast store of material at the disposal of the author, and of abridging the description of the different aspects of nervous diseases, has been performed with singular skill, and the result is a concise and philosophical guide to the department of medicine of which it treats.

Dr Ross holds such a high scientific position that any writings which bear his name are naturally expected to have the impress of a powerful intellect. This is, in a high degree, the case with the present volume. It begins with an anatomical, physiological, and pathological introduction, an analysis of the general symptomatology, and an outline of treatment of nervous diseases in general, and afterwards discusses the various disorders in turn, proceeding from the periphery to the centre. To select any portion of the work for special criticism would be difficult, as the whole volume is of wonderfully uniform excellence, but we may perhaps be allowed to say that the fifteen pages devoted to aphasia are about the best in the book. In this short compass Dr Ross manages to give a complete picture of aphasia in all its aspects—motor, sensory, and mixed. In this, as in every other part of the work, there is ample evidence of accurate observation and sound judgment, while the strong individuality of the author throws a pleasant freshness over it. Another passage which has also specially arrested our attention, is that which deals with multiple neural paralysis, as seen in progressive neuritis, lead paralysis, alcoholic paralysis, and diphtheritic paralysis, a subject which has of late received much attention. Here, as elsewhere, the author has his own observations to fall back upon, and from them he is able to draw vivid clinical pictures.

In every part this handbook merits the highest praise, and will no doubt be found of the greatest value to the student as well as the practitioner.

Bright's Disease, and Allied Affections of the Kidneys. By CHARLES W. PURDY, M.D., Professor of Genito-Urinary and Renal Diseases in the Chicago Policlinic. London: H. K. Lewis: 1886.

THIS is a conscientious attempt to give a concise account of the present state of our knowledge regarding renal diseases. It contains nine chapters, which are devoted in turn to Albuminuria, Uræmia, Acute Nephritis, Chronic Nephritis, Cirrhosis, Scarlatinal Nephritis, Puerperal Nephritis, Waxy Kidney, and Cyanotic Kidney. From this enumeration it will be seen that the author does not regard the so-called cirrhotic kidney as being one of the results of chronic nephritis, and we may at once say that he appears to be ignorant of the important work done in recent years by Rosenstein, Saundby, and others, to clear up the relationship between the contracted or granular and the large white fatty kidney. The book falls far short of its aim in this particular, that, although giving a short account of the morbid anatomy of the diseases with which it deals, it does not enter into the pathology of these affections in any way.

Turning to the chapter on Albuminuria we find that the views promulgated by Ludwig, and espoused by Senator, are not unfavourably regarded by the author. He does not mention any of the weighty arguments, such as those of the late Mahomed, which have been urged against these views, and in this connexion we must confess to a certain degree of surprise that the investigations of Ribbert—which have thrown so much light on the question at issue—are not mentioned.

On testing for albumen and the significance and treatment of albuminuria, the author is much more satisfactory, and we may remark that he is at his best in practical questions.

To the busy practitioner who does not aspire to accurate knowledge of modern views this book will be useful, and it seems to be a safe and judicious guide in matters of treatment.

Remarks on Hepatic Phlebotomy and Puncturing the Liver's Capsule as Curative Procedures in Hepatic Disease. By GEORGE HARLEY, M.D., F.R.S. Introduction to a Discussion on the Surgery of the Liver in the Section of Surgery at the Annual Meeting of the British Medical Association held in Brighton. Reprinted from the *British Medical Journal*, 1886.

THE discussion to which this paper was the introduction had one special and interesting feature in the fact, that one of the speakers who took part in it had himself undergone the operation of puncture of the liver at the hands of Dr Harley, and gave evidence as to the benefit he had received. It seems to us that the time has not yet arrived for an adequate estimate of surgical treatment of hepatic disease, but every one will admit that in very many cases immense advantages have accrued from the application of surgical methods of procedure to diseases of the liver. Amongst these methods, that proposed and employed by the author, to which we referred lately in reviewing his work on *Inflammations of the Liver*, seems to hold out good promise of usefulness, but without further observations it would be premature to attempt any estimate of its true position and value in medical practice.

A Manual of Dietetics. By J. MILNER FOTHERGILL, M.D. Edin. London: H. K. Lewis: 1887.

"THE day of dietetics has arrived." These words are the introductory sentence of the preface of this book. We wish they were true. No doubt with the scientific physician of to-day the subject of dietetics holds a higher place than in earlier times, but we can hardly claim that we live in a dietetic age. In fact the author disproves his own statement, for we find in the conclusion, as well as in Chapter XV., that he makes some severe remarks, in which the personal equation appears to have a certain influence on the tone adopted, in regard to the neglect of dietetics by the Royal College of Physicians of London.

Every attempt to further the study of dietetic treatment is calculated to improve our therapeutic methods, and we therefore welcome this work as a move in the right direction. With all its faults in style—and when we say that the volume is written in the manner characteristic of the author we say enough—this book is at once useful and suggestive in many ways. It gives a description of the forms of food and their preparation, and afterwards deals with food for the various stages of life and the different types of disease. We have no doubt that the medical practitioner will learn a great deal from its perusal.

On Diseases of the Lungs and Pleura, including Consumption. By R. DOUGLAS POWELL, M.D. Lond., Fellow of the Royal College of Physicians, Physician to the Middlesex Hospital, and Joint-Lecturer on Practical Medicine at the Medical School. Third Edition, Re-written and Enlarged, with Illustrations. London: H. K. Lewis: 1886.

So much of this excellent work has been re-written that it can hardly be called merely a new edition. It still remains, however, what it was before—the best text-book on the subject in our language.

We naturally turn at once to the portions of the volume which deal with the pathology and etiology of phthisis. As regards the former subject, we may say that Dr Powell takes up a friendly position towards the present movement in favour of the doctrine of Laennec regarding the essential unity of the lesions of phthisis. With respect to the etiology of phthisis, Dr Powell holds that the relation of the bacillus to the disease is not yet established, and makes some thoughtful remarks upon the position of the question. "The ætiological question at issue," he says, "is of the widest possible importance. The doubtful position of the bacillus does not affect established facts with regard to the infectiousness of tubercle and its contagiousness under artificial, and possibly under certain natural, conditions; but it essentially affects our views as to whether phthisis is or is not a zymotic disease, and darkens counsel with regard to preventive measures.

"We cannot say with phthisis, as with the more definite zymotic diseases, that we have health on the one hand and a specific organism on the other; that when we observe a man sickening with phthisis, the tubercle parasite is already in possession of him; and that we might hope, by exterminating the bacillus, to exterminate phthisis from our list of diseases. The characteristic lesions of phthisis are brought about by many causes, and furnish a soil upon which the tubercle bacillus will readily grow. Epiphytic in nature, concomitant in time, neither the seed nor the fruit of the disease, it must, nevertheless, be allowed that the tubercle bacillus takes an important part in the extension and conveyance of tubercle lesions."

As regards the "aptitude for the reception of the bacillus," the author carefully discusses contagion, climate, occupation, social conditions, and constitutional liability. All his remarks are excellent examples of thoughtful reasoning on the vexed question of the day as regards phthisis.

The chapter on the Physical Examination of the Chest is a model of lucid writing, and the explanation of the percussion and auscultation signs is admirable in every way. The directions are not only very useful, but often highly original, and this part of the work is enriched by the addition of the table of terms drawn up by Dr Mahomed and himself for the London Medical Congress.

Altogether the work is worthy of the author's reputation, and will be of the greatest use to the reader, whether he be a senior student or a busy practitioner.

An Introduction to General Pathology. By JOHN BLAND SUTTON, F.R.C.S., Sir Erasmus Wilson Lecturer on Pathology, Royal College of Surgeons, etc. London: J. & A. Churchill: 1886.

THE present volume is somewhat of a contrast to the ordinary run of works dealing with the same subject. The contents are founded upon a series of lectures delivered by the author at the Royal College of Surgeons during the present year, embodied with which are other contributions by the same of a pathological nature from other sources, in all of which the fundamental principle of the doctrine of evolution is brought to bear upon pathology, and where it is pointed out how structural peculiarities, pathological in their origin, have been apparently in many cases transmitted as race characteristics in animals. Mr Sutton shows very fairly how the same laws which regulate physiology do so also to the sister science of pathology. His views are perhaps best expressed in his own words:—"My object in these lectures is to endeavour to show that the structural aberrations to which animal organizations are liable, and of which Pathological Anatomy takes cognizance, follow the same laws which, when expressed in the terminology peculiar to that science, may be reduced to two—

1. Correlation { Hypertrophy.
                       Atrophy.
2. Coalescence."

The work is divided into four sections:—(1), Dealing with aberrations of nutrition, in which the chapter on the Correlation of Organs is specially interesting; (2), Inflammation and its results; (3), Cystomata, very full and replete with facts and deductions therefrom of a very philosophical nature; and (4), Neoplasms, which are classified from an embryological basis, the histological details being used to determine the varieties. The volume is well got up, the printing good, and the woodcuts illustrate the text in an admirable manner.

Practical Pathology: an Introduction to the Practical Study of Morbid Anatomy and Histology. By JOHN LINDSAY STEVEN, M.D., Demonstrator of Pathological Anatomy in the Western Infirmary of Glasgow, and Assistant Physician, Glasgow Royal Infirmary. Glasgow: James Maclehose & Sons.

THE long dearth of works on Practical Pathology is being followed by quite an epidemic of them. This is presumably due to the fact that the methods of pathological investigation have become so much simplified within the past decade, that there are really many more workers in this field, and that there is consequently a demand for such treatises as the one before us. It is not our intention to compare it with those which have preceded it in the same line. We welcome it as coming from the important School of Medicine in the West, and heartily wish it success. It is clearly and carefully written, and it cannot fail to be of the utmost service, especially to the students studying pathology under Dr Coates and Dr Steven. There can be no doubt that the value of the book would have been greatly enhanced had the author determined to illustrate it instead of issuing it as it is, without a single drawing of any kind.

Concerning Medical Education; an Address delivered at the Opening of the Session of the Abernethian Society, 14th Oct. 1886. By J. MATTHEWS DUNCAN, M.D., F.R.S., LL.D.

THIS short paper, full of wit and wisdom, is an admirable protest against the risk, which grows greater every day, that the medical student's education degenerates into a mere grind for the passing of too severe and too precise examinations. The necessity that lies on the poor fellow of getting up trivial details of anatomical or botanical nomenclature, long lists of chemical formulæ, or therapeutic or posological manipulations, or, still worse, of cramming up " tips " or fads of teachers who are also examiners, too often dwarfs the intellect and the imagination, and leaves the unfortunate man with a ruined memory, much in the condition of one of his grinder's manuals, which a great teacher once described as the parent as well as the offspring of mediocrity. Dr Duncan's protest, couched in homely but plain and precise language, with all his wonted incisiveness of style, is most valuable, and makes us again regret, as we do daily, that he was ever allowed to leave Edinburgh for London.

Our Temperaments: their Study and their Teaching. A Popular Outline, by ALEXANDER STEWART, F.R.C.S. Edin. London: Crosby Lockwood & Co., 7 Stationers' Hall Court, Ludgate Hill.

THE author of this book traces with great care and minuteness the differences of temperament among human beings, as related to, and influenced by, the differences of their complexions, colour of eyes and hair, build, form, etc.

He lays before the reader tables of every kind, describing the four pure temperaments—the sanguine, the bilious, the lymphatic, and the nervous—and their many and varied compounds. The book concludes with a fairly good set of illustrations, taken from Lodge's Historical Portraits, to show the chief forms of faces.

Our Temperaments would be read with greater ease and pleasure had the style in some parts been less involved, and the sentences less abrupt, both of which faults give one the feeling that the author would be more at home in lecturing than in writing. Notwithstanding this, the book has no small merit, and much instruction as well as amusement may be derived from its perusal.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXVI.—MEETING II.

Wednesday, 1st December 1886.—Prof. GRAINGER STEWART, *President, in the Chair.*

I. ELECTION OF NEW MEMBER.

Alfred Bell Whitton, M.B., C.M., Banff, was elected an Ordinary Member of the Society.

II. EXHIBITION OF PATIENTS.

Dr Allan Jamieson showed—(1.) A case of VARICELLA GANGRÆNOSA, and in doing so remarked:—There are three peculiar and prominent symptoms in chicken-pox. These are—the tendency the eruption exhibits to renew itself over and over again in successive crops; the itchiness which accompanies the complaint; and the scars which remain more or less persistently as tokens of its having been passed through. The first of these is always shown pretty distinctly, and on it we depend in some measure in forming our diagnosis. The second has been demonstrated by Mr Hutchinson to be not infrequently more than ephemeral, to be capable of enduring for a very considerable period of time, long after the originating cause has faded out of recognition. To this induced hyperæsthesia of the skin he has attached the name of varicella prurigo. A like exaggeration of the ulcerative propensity has been named by the same acute observer varicella gangrænosa. Cases of this latter development are rare, and the following one is not without interest:—A. M'L. was aged one year and nine months when he was brought to the Royal Infirmary on the 19th June 1886. His father had shortly before had his leg amputated below the knee for a sarcoma involving the ankle-joint. His mother was a healthy woman, who had been eleven times pregnant. Five children were born prematurely. One died of scarlet fever. Of the six which remain, one has had tubercular disease of the mesenteric glands, and one of the cervical glands has suppurated. Four others are in good health. There is no evidence whatever of any syphilitic taint. A. himself was apparently in good health when born, but began to pine when a month old, and since then has never been robust. He has signs of rickets in the state of the radius. Two months since he had measles, then hooping-cough, and when it had just begun to pick up a little, the rash of chicken-pox came out. None of the other children had varicella at the time, but it was pronounced chicken-pox by a doctor seen at one of the dispensaries. The eruption appeared about the 5th of June, and it had thus lasted a fortnight when I first saw it. It occupied the back, head, face, and right thigh. On the scalp and face were numerous small pustules. On the back in the centre were circular lesions elevated a line above the surface, rose-red at the edges, depressed in the centre and dark brown. There were also numerous ulcers, some as large as a shilling, with a red elevated margin, punched out edges, and a granular floor. Similar ones were also seen on the right thigh; all were circular. On the nates were flattish rose-red papules; some have had a vesicle at the summit, but this had dried into a crust. There were no clear watery vesicles when first seen. The eruption itched somewhat. Percussion resonance was impaired over the chest posteriorly, and there were some moist râles with prolonged expiration,—some degree, in fact, of broncho-pneumonia. Two days after this sketch of the back was made by Bayne. On 22nd June many fresh spots had come out on the back and face. The older ones had enlarged, and tended to ulcerate. The feet and hands, the lower part of the legs and arms, were still unaffected, and there were few spots on the abdomen. The child looked pale, and seemed to suffer much pain. It cried when touched or moved. Small doses of quinine and Dover's powder were prescribed. On the 24th some small clear vesicles with red areolæ had come out on the abdomen. More of those on the back had grown larger and ulcerated. Fresh crops of vesicles continued to appear over the whole surface till the 16th July, many becoming transformed into ulcers. Diarrhœa set in, but was checked by milk and lime water, and the pretty free administration of port wine. By the 16th July there was a decided improvement in all respects. Cicatrization had taken place under the scabs which had formed on the ulcers, and on the head many of these had fallen off, and left smooth bald patches. *27th July.*—There were now merely many round depressed scars all over the body. The skin on these cicatrices was thin, pink, and translucent. Child now in fairly good condition. On the 19th of November many of the cicatrices had become smooth and very nearly level with the skin around. In nearly all the sound margin of skin continued pigmented, the trace yet unobliterated of the areola. Hair had grown on the scalp to a considerable extent. There persisted a good deal of itchiness of the surface. Mr Hutchinson[1] has aptly compared varicella gangrænosa with rupia. Both manifestations are to be regarded as proofs either of a severe form of the respective diseases, or of some idiosyncrasy. In a case recorded, with observations, by Dr Payne,[2] which ended fatally, acute miliary tubercles were found in the lung; and he quotes from Dr Barlow some facts which confirm the impression that this coincidence of tuberculosis and varicella gangrænosa is not entirely fortuitous. Though there was no direct evidence of tubercle in A. M'L's. case, unless the broncho-pneumonia partook of this diathetic character, there was proof of such a taint in the family. If any doubt existed on the subject in this country, this case serves to support the idea prevalent in Britain that varicella is not a mere modification of smallpox, as is taught to some extent in Germany. It is somewhat curious that a pruriginous rash and a gangrenous eruption has in rare cases followed vaccination,[1] but no link connecting these with tuberculosis has so far been furnished. (2.) A case of LUPUS EXFOLIATIVUS without ulceration in a young girl, which had lasted about fourteen years. It had been latterly treated with the salicylic and creasote plasters, the 10 to 20 and afterwards the 15 to 30 plasters having been applied. After the disease had been destroyed by them it was treated with zinc ichthyol salve muslin, and then with mercurial plaster. With the exception of one doubtful spot, which they were watching, the disease had quite disappeared.

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[1] *On Rare Diseases of the Skin*, p. 235; *Med. Chirurg. Trans.* 1882, p. 9.

[2] *Trans. of Path. Soc., Lond.*, 1885.

III. EXHIBITION OF PATHOLOGICAL SPECIMENS.

1. *Mr Skene Keith* showed an OVARIAN TUMOUR of some interest, as the mass was situated outside the peritoneal cavity. The tumour, which weighed 17 lb., had grown from the left ovary, opening up the broad ligament, then passing across the pelvis behind the uterus, and splitting up the right broad ligament. After filling the pelvis, it had grown upwards, raising the uterus entirely into the abdomen, and the right ovary to the level of the umbilicus. It was thus necessary to divide the peritoneum twice before reaching the tumour. Mr Keith mentioned that this operation completed his first hundred cases of ovariotomy; and in answer to the President said that there had been three deaths and ninety-seven recoveries.

2. *Mr A. G. Miller* showed A LEG amputated for senile gangrene of the toes. The operation was performed through the lower third of the thigh because of the absence of pulsation in the tibial and popliteal arteries. Just where the femoral was cut through, a plug was found blocking up the vessel, and a little further up, where it was found to be pervious, a ligature was applied. Hutchinson advised amputation high up and early in such cases. The patient, a man, was doing well.

IV. EXHIBITION OF INSTRUMENT, ETC.

1. *Dr Foulis* showed a model of an ASPIRATING SYRINGE. It consisted of an ordinary syringe with two tubes fitted to the body

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[1] Hutchinson, *op. cit.*

of it. One of these communicated with the cavity, and when the piston was withdrawn served to suck air from a bottle which could be attached to the instrument. The other tube also communicated with the bottle, and by it the fluid was withdrawn which it was required to remove. The advantages claimed for it were the control it afforded over the atmospheric pressure, its simplicity and cheapness.

2. *Dr Allan Jamieson* showed PILLS coated with keratin, which was insoluble in the acids of the gastric juice. Unna, when making investigations into the formation of keratin in the tissues, found that it could be made insoluble in the acids of the gastric juice. The shavings of horn were digested in artificial gastric juice, then treated with ammonia which was driven off, and a substance left behind soluble in spirit, and insoluble in hydrochloric or acids of the gastric juice. This was a most valuable property, for pills coated in this way were dissolved only after passing the stomach. The pill-mass must be covered with cocoa butter before being coated with the keratin. The pills shown were got from Hamburg, but could be made in this country. One of them, containing five minims of the oil of turpentine, was intended for cases of enteric fever in which there was flatulent distension. The other contained lead and opium, which Dr Jamieson proposed to use in certain cases of typhoid diarrhœa, in which the stools being alkaline he hoped for some benefit from the keratin coating.

V. ORIGINAL COMMUNICATIONS.

1. *Dr Leslie* read his notes on a case of CEREBELLAR TUMOUR. (Dr Byrom Bramwell gave further pathological details regarding Dr Leslie's case.) See page 591 of this Journal.

2. *Dr Bramwell* read his paper entitled A CASE OF CEREBELLAR TUMOUR OF UNUSUAL CLINICAL AND PATHOLOGICAL INTEREST, which will be found at page 616 of this Journal. The papers were discussed together.

Dr M'Bride thought that although Dr Leslie laid stress on the absence of giddiness in his case, it was not so much a symptom to be expected in central as in lateral lesions of the cerebellum. Moreover, if he was right in his view that the diseases began some five or six years before death, it was possible to suppose that the other senses might, so to speak, become accustomed to the change, and act, if he might be allowed the term, vicariously. With reference to the difficulty of deglutition and of articulation apart from aphasia in Dr Bramwell's case, he thought that Krause of Berlin, in his experiments on dogs, found a cortical centre in the frontal region which so much influenced the bark as to be entitled to the name "centre for articulation." In the same region, too, Krause found a centre which governed deglutition.

Mr Cathcart remarked that the accurate observations of the effects of purgatives was of importance as throwing light on the question as to whether or not purgatives should be used in head injuries. Lately, some surgeons had objected to their use. Having himself seen benefit derived from them, he was interested to hear of their good effects in the cases described by Drs Bramwell and Leslie.

The President asked if the difficulty of articulation was due to a defective action of the lips, or of the tongue, or laryngeal movements, or a combination of these.

Dr Bramwell said the lips and tongue, not the larynx, were affected.

Dr Leslie said that he believed five years to have been the duration of his case, not quite so long as Dr M'Bride supposed. As to the suggestion that the giddiness might have been got over by habit, one would have expected to have seen some symptoms of the giddiness at first before it was got over in this way. He had recently a case under his treatment in which some of the symptoms closely resembled those of the case described by Drs Bramwell and Foulis. It was that of an old lady to whom he was called when she was in an aphasic condition, in which she stuck on the word "infective." She recovered from this attack in a few days, but during the next two years, till she died, had no less than twenty apoplectiform attacks, in which she appeared to be dying or dead. Constipation was a marked feature of her case also, but he found that extract of cascara had a wonderfully good effect.

Dr Bramwell was interested to hear of Krause's observations. He thought the absence of vertigo might perhaps be explained by supposing that the lesion was a "destroying" rather than a "discharging" one. The most marked case of cerebellar vertigo he had ever seen was examined last week. A secondary carcinomatous tumour occupied the same position in the right lobe of the cerebellum as the cyst in Dr Leslie's case.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVIII.—MEETING I.

Wednesday, 10*th November* 1886.—Dr HALLIDAY CROOM, *President, in the Chair.*

I. *The President* gave an OPENING ADDRESS, which will be found at page 585 of this Journal.

Professor Simpson, in proposing a vote of thanks to Dr Croom for his address, said that he was glad that Dr Croom had taken up some such subject as this, and that he had expressed his views on this exceedingly important topic in so clear and decided a manner. Such a conclusion as had been expressed could have been reached by the Society officially only after a prolonged discussion. But he thought the Society would do well in endorsing, as a body, the views as set forth by the President on this matter. He sympathized sincerely with the remarks made regarding the heavy losses the Society had sustained from death among its members. Some of those who had been removed from us had been active and enthusiastic members of the Society, and frequent and valued contributors to the *Transactions*. Some were doing good work for the Society and the science at the time of their death, while others had been connected with it from its foundation. He had much pleasure in moving a vote of thanks to Dr Croom for his admirable paper.

Dr Underhill had listened to the paper with much benefit and interest. He cordially endorsed every word which had fallen from Professor Simpson. He had listened to many introductory addresses, but he had never heard one which brought into a clearer focus the various points connected with this important subject. He was greatly pleased that Dr Croom had put the matter so clearly. It would be of much value when the subject came up for discussion. He had great pleasure in seconding Professor Simpson's motion.

II. *Dr Freeland Barbour* read a paper on the SECTIONAL ANATOMY OF LABOUR—STAGE I., which will appear in a future number of this Journal.

Professor Simpson thought that the Society had every reason to congratulate itself on this admirable opening to the work of the session. The important address of the President had been followed by this able and exceedingly valuable paper. The paper just read was a valuable one for many reasons, and not the least of them was its importance as giving a vidimus of the work done in this department of obstetric anatomy. It was a happy idea on the part of Dr Barbour to bring together the results obtained on the same lines by other workers, and it served to give a clear impression of what had been done by other observers. It was also very valuable by reason of the clear demonstration which Dr Barbour had given of the points of special obstetric interest brought out by his sections. The paper was not one which leant itself readily to discussion. It was interesting to note the confirmation which the paper gave to the views as to the relations of the serous covering of the uterus. He hoped some light would be thrown by this investigation on the much debated question of the relations and character of the lower segment of the uterus. Dr Barbour had not referred to the work of Bayer in this department. Bayer has demonstrated that the lower segment of the uterus is largely got from the upper part of the cervical canal. This view of Bayer is opposed to that of the Berlin school, and it would be interesting to know what light on this vexed question could be obtained from Dr Barbour's sections.

Dr Berry Hart said that he thought they had reason to be gratified not only by the paper to which they had just listened, but also by the interest shown in the work of the Society, as evidenced by the excellent attendance of the Fellows at this meeting. He agreed with Professor Simpson in his estimate of the value of the paper. In his (Dr Hart's) opinion the paper was one of great value, and it seemed to him in two respects, viz.,—first, in the accuracy of the drawings with which it had been illustrated; and, secondly, in the care with which these drawings were described.

THE GLASGOW OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

THE second meeting of this session was held in the Faculty Hall, St Vincent Street, on Wednesday, the 17th November—Dr Samuel Sloan, President, in the chair.

It was unanimously agreed that the day of meeting should be altered from the third to the fourth Wednesday in each month.

Dr Sloan exhibited an UTERO-VAGINAL FOMENTATION BAG, an invention of Dr Alex. Robertson, consisting of an indiarubber bag and afferent and efferent tubes adapted for the fomentation of the vagina and uterus. Dr Sloan had used the apparatus in one case for half an hour at a time, and with water at a temperature as high as 115°, with comfort to the patient and benefit to the inflamed organ.

Dr Abram Wallace exhibited a BLIGHTED OVUM, which, he observed, the older authors would have called a mole. The patient from whom the exhibit was obtained last menstruated in June, about which time she was in the habit of rowing a little, an unaccustomed exercise for her. She reckoned herself pregnant at end of August, when a slight brown discharge appeared. In September and October this was repeated. On the latter occasion she had ergot administered to her. About beginning of November, on her return to town, she aborted, with the result stated. He referred to a closely analogous case, a drawing of which appears on p. 278 of Playfair's *Science and Practice*, and which might almost be supposed to be a drawing of his specimen. Playfair considered his case one of "apoplexy of the ovum," and he considered a similar pathology applicable to his own case. There was no history of syphilis. The patient had had five living children, but there had been an abortion between the third and fourth.

Dr Sloan considered that the presence of a slight brown discharge was always indicative of a clot having been formed between the utero-placental surfaces and become decomposed.

Dr Malcolm Black then read a paper on PUERPERAL ECLAMPSIA, embodying the results of thirty-nine cases, four of these having occurred in private practice, and the rest either in the practice of the Maternity Hospital or otherwise. The frequency with which such cases occurred in practice was put down by Lusk as 1 in 500, and by Churchill as 1 in 600. The mortality in Dr Black's cases had been 1 in 3¼—12 out of 39. Some had been in convulsions a long time before being seen by him; one died of peritonitis eight days post-partum; and one had contracted pelvis, and required operative procedure for relief; one died undelivered, the fœtus being extracted, dead also, by Cæsarean section, *labour never having commenced*. The disease usually occurs in primipara, but in Dr Black's cases there were only 7 primip. to 32 plurip. It is not usually recurrent, but such a thing is not unknown. It occurs usually at or after the onset of labour. When anterior to onset labour is speedily induced. General anasarca, headache, and vertigo are frequent prodromata. So likewise is an albuminous condition of the urine. The fit is characterized by its mode of onset, the suddenness thereof, and the complete loss of consciousness whilst it endures. There are two waves of spasm—the first being tonic, and the second clonic. The muscles of the face and orbits are first affected, and the last to resume quietude. The attacks are recurrent, the patient regaining consciousness during the intervals at first, but ultimately remaining comatose between the paroxysms. The diagnosis from hysteria lies mostly in the consciousness of the patient in the latter condition. The various theories and hypotheses framed as pathological explanations of the disease were recounted. He specially referred to Frerichs', which imputed the blame to ammonium carbonate in the blood, resulting from imperfect elimination of urea by the kidneys, and mentioned as a fact that albumen was present in the urine of all his cases in quantity. Rosenstein had suggested and argued that the true pathology was one of increased arterial tension, hypertrophy of left ventricle, temporary cerebral hyperæmia, followed by effusion and consequent anæmia of brain. Kussmaul and Jenner favoured the anæmia theory. Macdonald had stood by the vasomotor doctrine of arteriole spasm. Dr Black thought that if a poison could cause these convulsions certainly ergot would, and he instanced a case where half an ounce of ergot had been taken with the effect that convulsions followed. The ergot had been taken for hæmorrhage. He considered that the excited condition of the female nervous system during the period of pregnancy and mental distress were strongly predisposing factors. As to *treatment*, he admitted that in bleeding in congestive and uræmic cases strikingly good results had been obtained, but that personally he had had no experience of venesection. In uræmic cases he purged freely. In one case he used pilocarpine, but the patient died. He believed pilocarpine to be a good remedy in these cases, however. In cases where it might be supposed that vasomotor derangement was the principal factor, the use of amyl nitrite and nitro-glycerine was suggested. He personally relied mostly on the continuous administration of chloroform, and instanced a case where the convulsions came on post-partum, and he had maintained the use of chloroform for many hours. Coming to the question of how to deal with the labour, he referred to the teaching of Leishman, who fears interference, and objects to dilatation and turning. Dr Black could not help thinking, however, that the fœtus was not only a source of reflex irritation, but that the blood of the mother was deteriorated still further by the excretory products thereof. Therefore he advocates speedy delivery, with proper precautions, as being most important, and instanced seven of his cases where the os had been dilated by Barnes's bags, and of these six had recovered. In some other of his cases he thought the result might have been better had early delivery been insisted on. The administration of ergot should be avoided after delivery, but chloral should be given.

Dr Park thought eclampsia did not occur once in every 500 or even 600 cases. He had only seen two cases out of a total of over 1500. Many practitioners had never seen any at all. He advocated venesection *ad deliquium* in all cases not obviously *uræmic*, and considered that even in these benefit would obtain from the practice. One of his cases died and one recovered; but as the urine in the latter case became solid on boiling, the result was not surprising. He had delivered expeditiously in both cases—with forceps in the one, by turning in the other. The latter was the case which proved fatal. Chloroform was administered, but she was not bled. He disapproved of the chloroform as a main line of treatment, and considered its proper place was that of an adjuvant. With regard to pilocarpine, he would warn against its use in cases where there might presumably be *advanced* renal disease.

Dr Murdoch Cameron agreed with the statement that 30 per cent. of the cases occurred before, 30 per cent. during, and 30 per cent. after labour, and that about eight of every ten cases occur in primiparæ. He had seen three cases, two of which were syphilitic, and one had been subjected to a severe fright during the seventh month. All the cases died. He had not much faith in venesection, but laid stress on chloroform, cold applied to the head, and cautious but speedy delivery.

Dr Thos. Halket had never experienced a case of eclampsia in his own practice, though he had attended 3000 cases. He had seen four cases, however, outside his own practice. They had all recovered. The main treatment had consisted in shaving the head and applying cold.

Dr Thomas Gilmour agreed that the principle of emptying the uterus of its contents without loss of time was a sound one. He could not fall in with the mental distress theory, however, as a predisponent. He could call to mind great numbers of cases of mental distress at period of labour—one case, indeed, in special, was present to his mind, where the patient actually died of a "broken heart"—but where there was no eclampsia. In two cases of the latter which he had had he suspected syphilis. His proportion of cases was 1 in 1000 labours.

Dr Richmond had had six cases.

Dr W. L. Reid wished to emphasize the necessity which there always was for caution and deliberation when endeavouring to bring about rapid delivery. He preferred manual dilatation of the cervix. Amyl nitrite was likely to be a useful remedy in cases occurring post-partum, when the uterine sinuses were closed.

Dr Pollok had met with four cases in his own praxis—two of them in sisters—and three outwith. All save one occurred post-partum. There was albumen in the urine in all cases, and he founded his diagnosis on this fact. His first case died. She was not bled. The next two were bled and recovered. The subsequent cases, except one, were anæmic, and were not bled, but treated heroically with pilocarpine and chloroform. In the result they recovered. The exceptional case died. He had used benzoic acid as a prophylactic in the three cases which recovered.

Dr Abram Wallace had seen a good number of cases, and believed that mental anxiety acted as a predisposing cause. As to the exciting, all theories were defective. He had observed, like Dr Pollok, that where there was much anasarca the eclamptic fits were not so violent.

Dr J. K. Kelly had seen 6 cases in 2800 confinements, or 1 in 470. He believed in expediting delivery judiciously. Preferred manual dilatation and forceps to turning. His main treatment had been ice to the head and chloral. He had seen benefit from pilocarpine in chronic Bright's disease. He inclined to attach most importance to Traube's pathology of eclampsia.

Dr Alex. Miller said his cases had occurred prior to or just at beginning of labour. He believed in keeping the patient under chloroform, and giving a large dose of bromide of potassium. As to venesection, he thought a good deal depended upon the case and the time. Kyd advocated it in plethoric cases, but admitted these were few. Madden, again, relied mostly on bleeding, whilst Lombe Atthill disparaged it.

Dr Sloan, in private practice, had only met with one case out of a total of 3000 confinements. He noted that no case had been authenticated where albumen was absent from the urine at the time of the fit. He thought unquestionably mental distress was a predisponent, added to the nervous erythism natural to pregnancy. No doubt idiosyncracy had a good deal to do with the matter also. In this connexion he referred to Dr Brock's paper on the sickness of pregnancy. He also narrated a case which seemed to be well after confinement, with the sole exception of a high pulse—200—and whose urine was found to be albuminous. A fatal result ensued from renal disease. There was no eclampsia during the puerperium or before. The aphorism of the late Prof. Pagan with reference to these cases was, "Empty the uterus as fast as you can, or as much as you can." It was, however, needful to take into careful consideration all the bearings of each case, and proceed with caution.

Dr Park pointed out that the high pulse case related by Dr Sloan, taken together with the physiological occurrence of albumen frequently in the urine during pregnancy, seemed to minimize the value of its presence as an indication diagnostic or therapeutic.

CARLISLE MEDICAL SOCIETY.

SESSION III.—MEETING I.

Thursday, 11*th November* 1886.

Office-Bearers.—Roderick Maclaren, M.D., *President;* Henry Barnes, M.D., *Vice-President;* William Douie, M.B., *Secretary.*

Dr Lockie showed a CASE OF OBSTRUCTED COLON, in which colotomy had been performed.

Dr Barnes showed a CASE OF ENLARGED SPLEEN; male, aged 20; there was a large increase of white, and a diminution of red corpuscles in the blood; and a CASE OF FLOATING KIDNEY.

Dr Tronton showed a TUMOUR OF THE THIGH in a boy, aged 10; and a case of WOUND OF CHEST, FOLLOWED BY HÆMOTHORAX.

Dr Maclaren read a PRESIDENTIAL ADDRESS ON HOLIDAYS, which appears at page 611 of this Journal.

The following pathological specimens were shown:—

Dr Lockie.—ENDOCARDITIS IN AN INFANT.

Dr Lediard.—ADENOMA OF BREAST; TWO OVARIAN TUMOURS.

Dr Macdougall.—FRACTURE INVOLVING THE FEMORAL EPIPHYSIS.

MEETING II.

Thursday, 9*th December* 1886.

Dr Hodgson showed cases of PERNICIOUS ANÆMIA, RODENT ULCER, and PARTIAL EXCISION OF LOWER JAW.

Dr Partridge showed cases of ICHTHYOSIS and EPITHELIOMA OF LIP.

Dr Barnes read a paper on the RECENT CASES OF FOOD POISONING IN CARLISLE.

Dr Lockie said that the period of incubation proved them cases of animal poisoning.

Dr Macdougall said that the most striking symptom to his mind was the suppression of urine without albuminuria. The desquamation was probably due to the febrile action.

Dr Lediard thought that the suppression was due to the excessive vomiting and purging.

Dr Maclaren referred to sporadic cases of food poisoning.

Dr Barnes was not prepared to say that albuminuria was absent in all the cases, but only in those under his care.

The following pathological specimens were shown:—

Dr Lediard.—MYELOID SARCOMA OF UPPER JAW; POLYPUS OF RECTUM; NECROSIS OF FEMUR WITH DISEASE OF KNEE JOINT.

Dr Douie.—TYPHOID ULCER WITH PERFORATION.

Dr Maclaren.—KIDNEY REMOVED BY OPERATION.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

ACETANILIDE: A NEW APYRETIC.—A substance known to chemists who work with dyes by the name of acetanilide, which is produced by the action of heat on acetate of aniline, and is contained in rosaniline made with acetic acid and iron, has recently been found by two German observers, Drs Cahn and Hepp, working in Professor Kussmaul's clinic, to possess powerful febrifuge or apyretic properties. They have given it the trivial name "Antifebrin." It appears to have, weight for weight, about four times the power of lowering the temperature of fever-patients that antipyrin has. The dose given varied from 0·25 gramme to 1 gramme (4 to 15 grains), as much as 2 grammes (half a drachm) being given during the twenty-four hours. In every case in which Drs Cahn and Hepp gave the drug, it produced more or less reduction of temperature; sometimes the thermometer registered a normal temperature for some hours together, and in these cases the appetite often returned. The action of the antifebrin was accompanied by a certain amount of perspiration, and with some redness of the skin, sometimes also by thirst and an increase in the urinary secretion. Occasionally a dark tint was observed in the skin of the feet and hands, but no serious symptom was observed in any of the twenty-four cases in which it was given. The price of the acetanilide is not high, being about a shilling an ounce. It can be administered conveniently in wine.—*The British Medical Journal,* 4th December 1886.

THE ANTIRHEUMATIC VIRTUES OF ANTIPYRIN.—We abstract from the inaugural essay of Dr Eich (Basel, 1886), on the antirheumatic virtues of antipyrin, some points of general interest. Of thirty-six cases treated by Dr Eich (acute and chronic articular rheumatism, acute muscular rheumatism, rheumatismus vagus), all patients but two could be discharged as cured. In one of the two cases the failure was predicted on account of the great anatomical alterations produced by the chronic process in the joints, and in the other, salicylic acid given alternately with antipyrin proved likewise useless. Eich concludes from the results obtained that antipyrin owns an exceedingly prompt and reliable antirheumatic power, and is in this respect in no way inferior to the preparations of salicylic acid. Still, Eich continued, the curative action of antipyrin is as little infallible as that of salicylic acid, and appears to possess no greater power to prevent cardiac complications than the latter remedy. In the treatment of affections of the endocardium and the serous membranes Eich saw likewise good effects from the drug. The absence of all secondary effects, however, renders antipyrin more eligible than the preparations of salicylic acid; at least the two remedies can conveniently supplement each other in case one should fail. As to the dose, Eich gives at the beginning from 60 to 90 grains, and later only 30 grains *pro die.* —*The Therapeutic Gazette*, 15th November 1886.

OXYMEL SCILLÆ IN WHOOPING-COUGH.—Dr Netter has recently read a paper before the Congress de l'Association Française pour l'avancement des Sciences (*Vide Archives de Pharmacie*, 5th September 1886), which, like all other therapeutic suggestions pertaining to pertussis, recommends itself to the notice of the practitioner. Netter advocates the use of the oxymel scillæ, prepared strictly according to the prescription of the Pharmacopœia, as an efficient remedy in whooping-cough. He gives the preparation pure without any excipient, and orders it in the following doses:—For suckling infants, 20, 40, to 60 drops in twenty-four hours in the intervals of nursing. For children of about two years of age, 4 to 5 teaspoonfuls, taken afternoon and evening, in intervals of six minutes. For children 3 years of age or older, 6 to 7 teaspoonfuls taken similarly as above. For adults, 8 to 9 teaspoonfuls taken in the same manner. His observations at the Hospital of Nancy went to show that the remedy administered under these conditions proved very efficacious. It is indispensable that the stomach be empty when the drug is taken, and the latter may be continued until the disappearance of the paroxysms. Dr Rémy confirmed Netter's observations, and stated that under this medication whooping-cough could be cured in about a week's time, and sometimes even sooner than that.—*The Therapeutic Gazette*, 15th November 1886.

THE NIGHT-SWEATS OF PHTHISIS TREATED BY SECALE CORNUTUM.—Mingot reports, in the *Journal de Médecine de Paris* (4th

July 1886), as to the unexpectedly favourable results obtained with secale cornutum in the night-sweats of phthisical subjects. He observed in Tenneson's clinics, at Paris, that 15¼ to 31 grains of ergot, given in powder form, or, better, 2 fl. dr. of ergotinine injected hypodermically half an hour previous to the expected appearance of the sweat, could suppress the latter for a week or even longer. No other of the numerous remedies recommended against night-sweats was, save atropine, found to have so great an effect as ergot or ergotinine. To be sure, the tubercular process is in no way influenced by the exhibition of this remedy; but it is gratifying to be able to stay one of the most annoying, and, at the same time, weakening factors of the disease.—*The Therapeutic Gazette*, 15th November 1886.

HAMAMELIS VIRGINICA IN HÆMOPTYSIS AND OTHER AFFECTIONS.—Dr A. Brondel writes to the *Bulletin Général de Thérapeutic*, 15th September 1886, as follows:—Last year I saw Dr Boncommont arrest, before my eyes, two hæmoptyses by means of the fluid extract of hamamelis, in doses of 40 to 60 drops, repeated three times *pro die.* I have employed the same extract successfully in pulmonary congestions, which yielded, with admirable promptness, to the daily ingestion of three to four teaspoonfuls of the remedy. Besides, I have frequently given and taken myself the extract in the beginning of inflammatory conditions of the larynx or trachea. Combining the extract of hamamelis with aconitine, I could, in the latter affection, produce a rapid cure. In the initiatory phases of rheumatism, an hour after absorption of the remedy, a marked relief and resolution of the inflammation will take place. —*The Therapeutic Gazette*, 15th November 1886.

THE PHOSPHATES in THERAPEUTICS.—Logeait writes, in the *Archives de Pharmacie*, 5th September 1886, the following concerning the value of phosphates in the treatment of disease:—The medicinal worth of the phosphates of lime has hitherto been singularly overrated. The triple phosphate of lime, the biphosphate, and monophosphate (acid phosphate), as well as the other principal preparations, such as the chlorohydrophosphate, lacto- and citrophosphates, are gradually disappearing from the field of practice, their places being occupied by the phosphates of potassium and sodium. Very recent observations have yielded the fact that the action of the phosphates of lime is exceedingly uncertain and doubtful, as they cannot be absorbed in the economy. No doubt, says Logeait, the soluble phosphates of lime remain dissolved as long as they are in the stomach, and the insoluble preparations become dissolved by the action of the gastric juices; but as soon as they have passed into the duodenum, the alkaline bile precipitates them at once, and renders them insoluble again. Hence, through the greater part of the entire intestinal tract they act as totally inert matters, and are finally rejected with the rectal discharges.

It is different, however, with the phosphates of potassium and sodium, which are equally soluble in acid, alkaline, and neutral menstrua; they remain dissolved during their entire passage through the digestive channels, and are consequently resorbable. The absorption of phosphates of lime is by no means indispensable to the explanation of the formation of osseous tissue. We can logically presume that the soluble salts of lime alone are absorbed, which precipitate neither in an acid nor an alkaline medicine. These salts meet, in the deeper channels of the economy, the phosphates of sodium and potassium, arriving with the same conditions of solubility, and form thereby double decomposition phosphate of lime.—*The Therapeutic Gazette*, 15th November 1886.

PERISCOPE OF MEDICINE, CLINICAL AND PATHOLOGICAL.

By G. A. GIBSON, M.D., and WILLIAM RUSSELL, M.D.

The compilers of the Periscope consider it desirable to state that they do not necessarily endorse the views contained in any of the papers from which abstracts have been made.

HÆMOGLOBINÆMIA.—From an exhaustive investigation Silbermann concludes that both coloured and colourless corpuscles are involved in hæmoglobinæmia and hæmoglobinuria, and that the hæmoglobin dissolved in the circulating blood destroys the leucocytes, and causes thereby a considerable increase in the fibrin ferment. Such an increase can also take place if the hæmoglobin, through splitting up of the leucocytes without destruction of them, produces the substances necessary to form fibrin. If great quantities of fibrin ferment are present in the blood in consequence of the action of hæmoglobin, there may be fatal thrombosis, or an enormous stasis in the abdominal veins causing fatal anæmia of the brain, or there may be lesser degrees of these conditions. The excretion of hæmoglobin by the kidneys takes place mostly by means of the tubuli contorti. If, through the general disturbance of the circulation, the glomerular epithelium is injured, the Malpighian tufts will also excrete hæmoglobin. The hæmoglobin casts partly arise from the glomeruli, partly from stasis in the contorted tubules. In toxic hæmoglobinæmia convulsions are of anæmic, not uræmic origin. The fever following toxic paroxysmal hæmoglobinuria is caused by the large quantities of fibrin ferment circulating in the blood.—*Zeitschrift für klinische Medicin*, October 1886.

PATHOGENIC MICRO-ORGANISMS IN SYNOVIA IN INFECTIOUS MALADIES.—Following Schüller, M. Smirnow has made some researches into the presence of pathogenic micro-organisms in the synovia of subjects affected by infectious maladies. The following are the facts he has observed:—(1.) In 11 cases of fibrinous pneumonia the articular synovia contained the capsuled diplococcus of Friedlander in 45 per cent. of cases. (2.) In 3 out of 8 cases of tuberculosis the synovia contained the bacilli of Koch. (3.) In 1 case of erysipelas and in 1 case of phlegmon no coccus was found in the synovia. (4.) Equally negative results were obtained in 1 case of recurrent fever, in 1 case of malignant pustule, in some cases of pericarditis, of peritonitis, and of perimetritis.—Abstract in *Gazette Médicale de Paris*, 27th November 1886.

MICRO-ORGANISMS IN ACUTE INFLAMMATIONS OF THE LUNG.—Weichselbaum has made researches into 129 cases of pneumonia, 102 of which were primary and 27 secondary. Cultivations were made with the pneumonic products in 83 of these cases, while the remaining ones were submitted to microscopic examination. In some the observations were made soon after death, in others they were made during life by obtaining some of the pneumonic exudation by means of a Pravaz's syringe, and in all, without exception, organisms were found. The author distinguishes four varieties: (*a.*) The most frequent, called by the author the diplococcus pneumoniæ, presents a strong resemblance to the pneumococcus of Frænkel, the coccus lancéolé of Talamon. (*b.*) The streptococcus pneumoniæ, which could often only be distinguished after cultivation. (*c.*) A form which the author only found in cases of secondary pneumonia, and which appears on cultivation as a staphylococcus (aureus or albus). (*d.*) A capsulated bacillus, which appears to be identical with the pneumococcus of Friedlander. The author concludes that cold is not an etiological factor in pneumonia, but that it is an infectious affection, which may be engendered by many pathogenic agents or microbes, and that that which intervenes most frequently is the diplococcus pneumoniæ.—*Wiener Medicinische Wochenschrift* in *Gazette Médicale de Paris*, 11th Dec. 1886.

AMYOTROPHY IN HYSTERICAL PARALYSIS.—Babinski has carefully studied in several cases the muscular atrophy which occurs in hysterical paralysis, and has found that, although the atrophy may be considerable, there is never any reaction of degeneration. The amyotrophy is, therefore, a simple atrophy, altogether independent of any change in the gray matter of the cord or in the peripheral nerves. There is a certain amount of diminution of electric contractility in proportion to the muscular atrophy. The atrophy rapidly progresses to its maximum, and then remains stationary, although the paralysis remains. The author holds it to be strictly comparable to atrophy following disuse of joints, or consequent upon cerebral paralysis without spinal or nerve changes.—*Archives de Neurologie*, September 1886.

VESICAL PARALYSIS IN LEAD COLIC.—There is sometimes observed in lead colic retention of urine due, not to spasm of the neck, but to a true paralysis of the bladder. This form of retention is usually transitory; but in two cases recorded by Max Jacob it constituted a grave complication, and came on at the end of an attack of moderate intensity, in which the patients did not appear very seriously intoxicated. One of the cases died. In both cases the bladder trouble came on when convalescence seemed to have been established. The paralysis was preceded by vesical tenesmus in both cases. In both the condition lasted for two or three weeks. The fatal case was due to putrefactive changes occurring in the urine, followed by the usual symptoms of such an occurrence, namely, delirium, prostration, coma, and convulsions.—*Archives Générales de Médecine*, November 1886, from *Deutsche Medicinische Wochenschrift*, No. 32, 1886.

ON DYSLEXIE.—Dyslexie has been observed by Berlin in six patients. It is a symptom characterized by the impossibility of reading more than three, four, or five consecutive words. The subjects of this affection read the words correctly whatever the size of the print may be, but they cannot continue reading. They stop for an instant, and then resume, but with the same want of success. They have no affection of speech, they pronounce clearly words pronounced to them, and their intelligence is retained. Dyslexie has nothing in common with the visual hebetude of the ophthalmologists, for it is not accompanied by any ocular trouble. In reality it is a variety of aphasia, and more precisely it is an incomplete and definite verbal blindness. The condition comes on generally suddenly, with various cerebral symptoms, which leave no doubt regarding its anatomical substratum. The author seeks for lesion in the left hemisphere. He has had four autopsies. In one case he found a softening of the gray matter in the inferior parietal lobule. In the others the area of softening was not localized so precisely. The author has always found important alterations in the cerebral arteries. It always indicates a grave cerebral lesion going on rapidly to death.—*Archives Générales de Médecine*, Nov. 1886.

A NEW FORM OF EXOPHTHALMOS.—Since the researches of Hack and others there is known a series of reflex neuroses of nasal origin. Hack has been led to join exophthalmos to these neuroses from the following case:—A girl of 17 years was brought to consult the author by a doctor, who furnished precise information about her history. From early years she had been affected by characteristic double exophthalmos, and during the same period there was a tendency to obliteration of the nasal fossæ by mucous masses. In May 1885 she complained of pains and of severe cardiac palpitations. Soon there appeared signs of cardiac hypertrophy. At the same time the exophthalmos was aggravated, and the tumefaction of the left lobe of the thyroid increased. Obstruction of the nasal fossæ increased to such a point that energetic treatment appeared necessary. The author, therefore, with the cautery removed these growths from the right nostril. The result was surprising; even when the nostril was still obstructed by the inflammatory products due to the cauterization, the exophthalmos of that side lessened—indeed nearly completely disappeared. The exophthalmos on the left side persisted unchanged. Some days after the left nostril was similarly dealt with, and on this side also the exophthalmos was diminished, but less rapidly and less completely than on the right. Before the patient left, the cure of the nasal fossæ was completed. After several months it appeared that the nearly absolute cure of the exophthalmos was maintained. The palpitations disappeared, and the heart regained its normal volume. The enlargement of one lobe of the thyroid has diminished, but without disappearing completely. Visual acuity was normal. It is claimed that here is an instance of a reflex neurosis, Grave's disease, cured by nasal cauterizations.—*Archives Générales de Médecine*, Nov. 1886, from *Deutsche Medicinische Wochenschrift*, No. 25, 1886.

MEDICAL PERISCOPE.

By Francis Troup, M.D.

Berlin. Klin. Wochensch., No. 40, 1886.—Dr Glasmacher details circumstantially five cases of poisoning by putrefying albumen. The symptoms were chiefly rapidity of heart's action, paralytic weakness of all the muscles, retching, vomiting, and diarrhœa. He considers that the poisonous principle which occasioned all this trouble was a putrefactive derivate of the albumen, a ptomaine of some kind, probably peptoloxin.

Ibidem.—Dr Golowin draws attention to the fact that in many aneurysms and dilatations of the ascending aorta, during the systole of the heart a retraction of the intercostal spaces, or of the left half of the præcordia, one or both together, is to be seen. In six cases the diagnosis from this symptom alone was verified at the post-mortem. The paper goes on to prove that this systolic indrawing, or, as he calls it, "negative heart-impulse," is an important sign of such alterations of the aorta ascendens, and is, indeed, an unfailing consequence of the altered heart-locomotion called forth by such affections.

Ibidem, No. 41, 1886.—Biermer, of Breslau, has a paper on acute lung inflation and its relationship to bronchial asthma. He uses the expression "Lungenblähung," or lung-inflation, to mark a functional transitory dilatation of the air vesicles, which differs from emphysema in not causing (at least for the time) any organic degeneration or loss of elasticity or atrophy of the alveolar walls. It is always caused by local hindrances to *expiration*, which produce overfilling and overdistention of the alveoli with residual air. The conditions of "lung inflation" consist in increased inspiration and obstructed expiration. Simply increased quantity of inspired air is not sufficient to produce a lung inflation; for the alveoli, although distended, immediately contract on expiration if there is no impediment to their emptying. It is the impeded expiration which has most weight in the process. Inflation happens when trifling obstacles are present in the finer air-passages, and which are more easily overcome by in- than expiration; the patient inhales more air than he can expire, and thus his forced breathing blows up the alveoli wherever those obstacles are.

Such obstacles, which cause stenosis of the finer air-passages, are formed by hyperæmia and swelling of the mucous membrane, collections of mucus, exudations or blood, or, as Biermer still insists upon, spasm of the unstriped circular muscles of the bronchi. If the obstruction is very great, almost complete, then atelectasis comes on; if less complete, and if the ventilation of the alveoli does not cease entirely, their inflation follows. Laennec called attention to this mode of dilatation of the air vesicles. The most acute and eclatant alveolar inflation which Biermer has ever observed took place in an aneurysmal case, in which the tumour burst into the air-passages. He found the bronchi stuffed with blood, and the alveoli very largely distended in consequence of the air inspired during the last agony not being able to find a way out again.

Much more frequently this dilatation is seen in diffuse or capillary bronchitis, and it is always found in bronchial asthma. Similarly, in hooping-cough lungs and in the pneumonic lungs of children, beside the atelectatic parts and the lobular infiltrations there are inflated portions. These have been called specimens of "vicarious" emphysema, but are really not so, for the inflated alveoli cannot take the place of the collapsed ones; on the contrary, they add to the mischief, because they are not properly ventilated. In the lungs of children atelectasis happens more readily than inflation, because the powers of respiration are weaker and the air-tubes narrow. The inflated portions can be diagnosticated during life by inspection, percussion, and auscultation. A modification of deep percussion sound, which Biermer compares to a bandbox or horsehair cushion sound, is to be heard, and auscultation gives the stenotic hissing sounds. It is the same in asthma; shortly after the attack is begun the lungs inflate, the diaphragm stands deeper, the heart-dulness alters, and the hypersonorous bandbox sound is heard in certain regions, especially the inferior and lateral, of the lungs.

Biermer's belief that spasm of the bronchial muscles plays an important part in asthma has been attacked by many; by, among others, Sée, who considers asthmatic bronchial catarrh a vasomotor phenomenon reflected from a bulbar origin, and a bronchial asthma as a pneumo-bulbo-phrenic neurosis.

The circular bronchial muscles must diminish the lumen of the bronchi when they contract, and their respiratory importance is a logical necessity. They support the elastic fibres in their resistance to the negative inspiration pressure, operate in a tonic way, and, in this sense, are so far antagonistic to the muscles of inspiration. The tone of the bronchi preserves the lungs from too strong expansion in inspiratory spasm, as in sneezing. Also in unequal distribution of the positive pressure of expiration, as in coughing and straining with a narrowed glottis, the tone of the bronchial muscles must be beneficial; in fact, they have the function of regulators of pressure, just as the arterial muscles. That the bronchial muscles are there in order to contract must be believed, even although nobody ever saw them do so. But it has been seen. By direct and indirect irritation through the vagus they have been caused to contract, and if this irritation has not been followed by some strong contractions one can only at most say that the right locus for the irritation has not yet been found. Perhaps, instead of in the vagus, it may be in the pulmonary sympathetic plexus. If bronchial muscles can contract, they can also do so *spasmodically*, and pathologists will have to inquire what effects are thus produced.

Many pathologists disbelieve that nervous asthma is a spasm of the bronchial muscles, because, with the methods hitherto used, a bronchial spasm cannot be called forth, but only through the medium of the phrenic, a spasm of the diaphragm. In asthmatic dyspnœa laborious and hissing expiration is a great feature. In the very beginning those sibilant rhonchi are to be heard, and indicate without doubt obstacles to the passage of air. Those sounds cannot be explained by an inspiratory tetanus. We must believe in local obstructions in the bronchioles, and if there is no broncho-spasm, other stenosing conditions of the bronchioles must be thought upon. Such might be found in catarrhal fluxions and tumefactions of the mucous membrane which are known to accompany asthma. But a simple bronchial catarrh may go on for a very long time and yet have no asthma, and most asthmatics have after attack a catarrh with simple dyspnœa. There is thus something else than catarrh and a vaso-motor fluxion needed to explain asthma, and this something is broncho-spasm.

PERISCOPE OF GYNÆCOLOGY AND MIDWIFERY.

By J. MILNE CHAPMAN, Inverness.

IS DISEASE OF THE UTERINE APPENDAGES AS FREQUENT AS IT HAS BEEN REPRESENTED?—In the November number of the Journal we gave a full abstract of a paper bearing the above title, by Dr Henry C. Coe. To the *American Journal of Obstetrics* for September, Mr Lawson Tait contributes a letter, in which he meets and controverts Dr Coe's statements. On one point he says, "Let us take the only two investigations which have up to the present time been made from anything but a surgical standpoint.

Dr Kingston Fowler in three years found fifteen cases of pyosalpinx (leaving out of the question altogether the minor troubles which do not and cannot, save by the merest accident, appear on the post-mortem table) in the Middlesex Hospital; and of these eight had been fatal from peritonitis, due to rupture. Still more recently, and still more forcibly, comes the argument propounded by Dr Grigg, who, out of five deaths which occurred within a certain period in the practice of the Queen Charlotte Lying-in Hospital—and these five were all the deaths that occurred in that period—found that four were due to chronic lesion of the uterine appendages. But for the careful examination made, at Dr Grigg's special request, by Dr Allchin, every one of these four cases would have been set down as ordinary puerperal fever; and how can we tell, unless more frequent post-mortem investigations are made in puerperal cases, that these murderous diseases are not of infinitely more common occurrence than we imagine? No sooner does a woman get a tympanitic abdomen and feverish symptoms after labour, than it is the foolish practice to immediately pronounce it a case of septicæmia; whereas my belief is, and the belief is sustained absolutely by Dr Grigg's experience, that if the abdomen were promptly opened and causes searched for, not only would the word septicæmia be banished, but we might be able to save lives which up to the present moment have been sacrificed." Mr Tait also protests against what he terms the loose and unjustifiable way in which Dr Coe uses the terms Tait's operation and oöphorectomy, and to the fifth of Dr Coe's conclusions he gives an unqualified denial.

CASTRATION IN MENTAL AND NERVOUS DISEASES.—The October number of *The American Journal of the Medical Sciences* contains a symposium by the leading authorities on this subject in the United States, Great Britain, and on the Continent. Sir Spencer Wells maintains that the operation of oöphorectomy, or the removal of normal ovaries, is one which may be advised in some cases of uterine fibroids, and in uncontrollable uterine hæmorrhages. That it is to be resorted to in certain malformations of the genital organs, deformities of the pelvis, and accidental obstructions of the vagina. That the right to use it is very limited in cases of ovarian dysmenorrhœa or neuralgia, and only when they have resisted all treatment, and life or reason is endangered. That in nearly all cases of nervous excitement and madness it is inadmissible. That it should never be done without the consent of a sane patient, to whom its consequences have been explained. That the excision of morbid ovaries and appendages should be distinguished from oöphorectomy, and ought not to be done without the authority of consultation, as in most other cases of abdominal section. That in nymphomania and mental diseases it is, to say the least, unjustifiable. Professor Hegar holds that castration is indicated in a psychosis evoked or maintained by pathological alteration of the sexual organs, and in a neurosis originating from the same source, as soon as this imperils life or hinders all occupation and all enjoyment of life. The indication is also present when that disease represents only one causal factor in the genesis of the affection, without the removal of which a cure is not to be thought of. The remaining causes of suffering must be in this case accessible to treatment. Other milder methods of treatment must have been tried previously without success, or, as in the case of many small tumours of the ovaries and tubes, must from the outset give no promise of success. Castration must actually affect the cause which occasions or keeps up nervous irritation. The operation will thus be of use when a degenerated or dislocated ovary represents the irritative focus, or as soon as a greatly swollen and retroflexed uterus presses on the sexual plexus and the organ is brought into a state of atrophy. Castration promises success when the bleeding and anæmia occasioned by a fibroma play an important part in the maintenance of a psychosis, so that a cure does not appear possible without getting rid of that evil; but castration is absolutely no universal remedy for any neurosis originating from a genital-organ disorder, or kept up by the same. The cessation of ovulation will avail nothing if the irritation starts from the nerves which are compressed in a shrunken cicatrix of the broad ligament, or elsewhere in a cicatrix of the pelvic connective tissue. Dr Batty writes that he has performed castration for the relief of mental and nervous disorders, which may be divided into three classes: oöphoro-mania, oöphoro-epilepsy, and oöphoralgia. He uses the terms oöphoro-mania and oöphoro-epilepsy instead of hystero-mania and hystero-epilepsy, because clinical experience teaches him that these disorders are dependent upon a nervous irritation proceeding from the ovaries and not from the uterus. He finds the disorders existing (*a*) in cases in which he recognises organic disease of the ovaries, and is not able to recognise any organic disease of the uterus; (*b*) in cases of uterine as well as ovarian disease, when the diseased ovaries are removed the nervous disturbance disappears, notwithstanding the fact that a displaced or diseased uterus may remain. In his experience the time required for the disappearance of nervous disorders, after removal of the ovaries, has been quite variable. In general, epileptiform manifestations have ceased at once. Some of the cases have required for a time the tranquillizing effects of the bromides to ward off threatening symptoms, whilst others have needed nothing. His cases of mania have all been quite chronic, and the improvement has been slow. In oöphoralgia, in a few instances, the cure has been immediate and permanent. In the majority it has been slow and gradual; and in others nothing has been gained for even two years after the operation. In a few, the long established opium habit has proved a complete bar to recovery. In his cases, which have had two years or more to test them, seven have been cases of oöphoro-mania—of them one was cured and four improved; nine were cases of oöphoro-epilepsy, all cured; twenty were cases of oöphoralgia, and thirteen were cured and three improved.

A Proposed Modification of Porro's Operation (*Chicago Medical Journal and Examiner*, Sept. 1886).—Dr John Bartlett, of Chicago, proposes to modify the operation of Porro by first opening the uterus with a thermo-cautery instead of the knife, and, after the removal of the fœtus and secundines, to invert the organ, clamp the cervix in the vagina, and then amputate as in the Porro method, leaving the stump in the vagina. The proposition is ably presented in a paper which was read before the Chicago Gynæcological Society on June 26th. This plan was proposed in Europe in the early days of the Porro method, to avoid the dragging of the pedicle upon the abdomen, and the risk of dropping in the stump for the same purpose, as devised by Gustav Veit, of Bonn; but no one in the six years that have passed has thought sufficiently well of it to give it a trial. It is, therefore, not new, and at the present time the Porro method is being in a measure superseded by a less dangerous one in an improvement of the old Cæsarean operation devised by Dr Sänger of Leipzig. There is no hope from theoretical reasoning that the Bartlett plan would ever be able to save 80 per cent. of the women, and nearly 100 per cent. of the children, as has been done in Continental Europe, under the Sänger method, and it is, therefore, only to be regarded for its ingenuity. The Porro operation of to-day has not the status that it had three years ago, or even one year ago, for the wonderful results under the old Cæsarean section with the Sänger improvement have excited the attention of some of the most famous of the followers of Porro, who are now making trial of it because of its lesser fatality. When the operators in two maternity hospitals have saved 16 out of 17 women, and all of the children, by it, there must be more in it than an accidental train of good fortune. The Porro method, even under Chiara of Milan, was made to appear more dangerous by comparison, and Chiara himself reports as an entire success a trial of the new plan made just three days after Dr Bartlett read his paper. When we consider that in the year from July 1885 to July 1886 there were 20 Sänger operations in Europe, with a loss of only two women, we can comprehend the futility just now of recommending any other scheme of delivery in cases of pelvic obstruction. Mr Lawson Tait, having lost three women by the Cæsarean section and saved one by the Porro method, may prefer the latter, and rate the mortality of the former at over 99 per cent., but he cannot establish his estimate in view of these incontrovertible facts. Until a wiser man devises a safer method, we shall recommend that of Sänger as simplified by Leopold, for it has saved 90 per cent. of the European cases in the past year. In 1880 there were 27 Porro operations (true) in Europe, resulting in the saving of 10 women and 21 children. In 1883 there were 12 recoveries and 10 deaths, which is the best year in Dr Godson's table. In no year were 18 women saved from any number of operations. The 31 Sänger Cæsarean operations of Europe have been the work of 13 operators in Germany, Austria, France, and Italy.—*Philadelphia Medical News.*

PRURITUS OF WOMEN.—Dr Chêvon, in *Le Progrès Médical*, after showing how intractable many of the cases of pruritus are, states that of all the remedies proposed veratria is by far the most efficacious. When the pruritus is localized at groins, arm-pits, walls of the abdomen, or behind the ears, gentle friction night and morning with an ointment consisting of 30 parts of lard and a quarter of a part of veratria usually gives relief. When the pruritus is generalized, the internal administration of the veratria is preferable. Two centigrammes should be made into ten pills with liquorice powder, of which two to six should be taken daily, either half-an-hour before or three hours after meals. Only one should be taken at a time, an additional one being given each successive day until the maximum of six (three milligrammes) is attained.

THE EFFECT OF LONG-CONTINUED LACTATION ON THE UTERUS AND OVARIES (Sinclair, *Revue Med.*)—The writer's conclusions are:—1. Lactation tends to prevent conception by its influence on the ovaries in retarding a return to a state of perfect ovulation. 2. After weaning the evolution of the ovaries becomes more rapid than during lactation. 3. After prolonged lactation a sudden cessation may be followed by a rapid evolution of the uterus and ovaries, giving rise to symptoms of hyperæmia of the ovaries and uterus. 4. Prolonged lactation may produce a superinvolution of the uterus and ovaries, causing, where circumstances favour, a partial or complete prolapse of the womb.

CAUSE AND THERAPEUTICS OF INSUFFICIENT LACTATION (Dolan).—1. The therapeutic action on the secretion of milk is only possible through the blood. 2. All liliaceæ, cruciferæ, solaneæ, and umbelliferæ pass from the blood into the milk. 3. There are no veritable galactogenic remedies; the action of jaborandi is uncertain. 4. Belladonna is an antigalactogenic drug. 5. The proportion of the salts in the milk can be augmented by medicines. 6. Diuretics and purgatives can be administered to the child through the milk of the mother. 7. Dietetic and hygienic means improve both quantity and quality of the milk. 8. The causes of insufficient lactation are—(1), Insufficient formation of the glandular utriculi or of the epithelium—in this case treatment is useless; (2) Torpidity of the mammary glands—electricity, warm poultices, and cupping will relieve this condition; (3) General anæmia and insufficient alimentation. Dolan regards the presence of dental caries as very important in this respect—the country women, who usually possess faultless teeth, can also nurse their children best.

Apparatus for Vaginal Irrigation (Imlach).—At a meeting of the British Gynæcological Society, Dr Imlach showed the apparatus employed by him for prolonged vaginal irrigation. It consisted of a spring ring pessary with a rubber diaphragm, into which two rubber tubes, each a foot long, were inserted flush with the surface, and both influx and efflux tubes terminated in a tap. After the pessary had been inserted within the vulva, a yard of tubing was attached to each tap. The influx tube was then connected with a two-gallon jar placed on a table beside the bed or chair occupied by the patient, while the efflux tube hung over a pail. In cases of disease of the cervix uteri and of recent pelvic inflammation, he had often continued the irrigation for long periods without intermission. A nurse in attendance was required, as the flow was six gallons in the hour, though it could be diminished by turning one of the taps. When the ordinary vaginal douche, or any of the rather expensive vulvar cups were employed, few women could bear the injected fluid at a higher temperature than 105° or 107°, and the labour was so troublesome that they were seldom used for longer than half an hour each day. With his instrument a temperature of 120° could be borne without pain. Sometimes various disinfecting solutions were used, but often only hot water during the greater part of the time. He generally began the treatment early in the morning, and it was continued until evening. If the patient was able, she sat, reading or sewing, in a low chair; but if not, she lay on a couch. In the evening the extra tubing was removed, and glycerine, to which any required medicament could be added, was injected through one tap until it flowed out at the other. Then both taps were turned off, and the cervix uteri was left in this glycerine bath all night. Next morning the irrigation was renewed, and the pessary was not removed until the course of treatment was concluded. In recent pelvic inflammations the relief from painful symptoms, when the method of continuous irrigation was employed, was far greater than what he had ever obtained by the intermittent and occasional douche. In cervical catarrh this method was sufficient, except when there was considerable laceration of the cervix uteri. And in cancer of the uterus, fœtid discharge and pain were mitigated. He thought the apparatus would be found to be of service in obstetric practice. It was simple and cheap, and could be made of different sizes by any instrument maker.

Palliative Treatment of Uterine Cancer (Gaches Sarrante, *Nouvelle's Arch. d. Obstet. et de Gynec.*)—The writer states, as his opinion, that in cancer of the uterus frequent dressing with liquids, powders, or other antiseptic agents, presents the following advantages:—1. When regularly applied they suppress absolutely the hæmorrhages, even when severe; 2. They modify the nature of the lesion by removing the putrescent products which form on its surface, and give it the appearance of a healthy sore; 3. At first they calm the pains, which later return with increased intensity, finally to cease definitely; 4. They prevent the absorption of infectious products, and thereby greatly improve the general health of the patient; 5. They moderate extension of the lesion, and prevent extension by contiguity to the vagina and bladder; 6. Finally, they permit the patient to live the life of the world at large, and, so to speak, to dissimulate her malady.

OCCASIONAL PERISCOPE OF THE DISEASES OF CHILDREN.

By CHARLES E. UNDERHILL, M.B., F.R.C.P.E., Physician to the Royal Hospital for Sick Children.

REPORTS, WITH COMMENTS, OF TWENTY-ONE CASES OF INDECENT ASSAULT AND RAPE UPON CHILDREN.—Dr Jerome Walker, of Brooklyn, reports these cases, about which he was consulted as a medical jurist. They are given in some detail, and are far from pleasant reading; but they are important as showing how little injury may be done to the parts, even of very young children, in the commission of what is rape in the eye of the law. In several of the cases the accused pleaded guilty to the offence; but, even in these, there was seldom more injury than slight abrasions with connecting enlarged bloodvessels. In fact, he says, in cases of rape, lacerations and even severe contusions of the child's privates are comparatively rare. For the detection of spermatozoa the author employs a method not generally used, but which he finds very efficient, viz., if the stain be upon any thin fabric—cotton, linen, silk, etc.—he cuts out a very small piece, one-eighth of an inch square, lays it on a glass slide, previously moistened with a drop of water; after soaking for half an hour he teases it out with needles and puts it under the microscope, when the spermatozoa, if present, will be seen among the meshes of the fabric. If the fabric be too thick for this, he folds it through the middle of the stain, shaves off the projecting edge on to a drop of water on a slide, and then puts it under the microscope. He claims for this plan extreme simplicity, ease of execution, and the greatest degree of certainty. The diagnosis between a gonorrhœal and leucorrhœal discharge cannot be made with certainty, and must depend upon collateral evidence.—*Arch. of Pediatrics*, May and June 1886.

THE NON-IDENTITY OF CROUPOUS TONSILLITIS WITH DIPHTHERIA.—A form of tonsillitis, attended by the formation of a false membrane is described, which is superficially not unlike diphtheria, but may be distinguished by attention to the following points:—In the non-diphtheritic disease the invasion is abrupt; the general disturbance is greatest for the first two days, the initial temperature varying from 103° to 104°·5; the pulse is full and rapid; there is no tendency to asthenia; the membrane is of yellowish colour, has sharply defined edges, is limited to the tonsils, is superficial, can be detached without bleeding, and does not tend to re-form after removal; moreover, it appears early and does not spread; albuminuria is rarely, if ever, present; the disease is at its height on the second day, and by the fourth day the patient is convalescent; it is never followed by paralysis, and it is not contagious. True diphtheria differs from this in almost all the points mentioned. Still, a sure diagnosis is only to be made by a careful consideration of all the symptoms. The treatment recommended is a small dose of aconite till the temperature begins to fall, and the administration of the bichloride of mercury in doses of $\frac{1}{100}$th of a grain every two hours. As to etiology, no positive opinion is given.—L. Emmett Holt, M.D., *New York Medical Journal*, 8th May 1886.

THE RELATIVE INFLUENCES OF MATERNAL AND WET NURSING ON MOTHER AND CHILD.—In this interesting paper Dr J. E. Winters discusses the question of nursing by the mother as opposed to the employment of a wet-nurse, from the standpoint of a large experience and wide reading. He shows how comparatively small is the mortality, even under the most unfavourable circumstances, of infants nursed by their own mothers,—illustrating the statements by statistical facts gathered from private practice and institutions in America, England, and the Continent. He next presses the great advantage that accrues to the mother from nursing a child at the breast, by showing that such mothers make better recoveries, and are stronger and healthier women, and that they are very much less liable to, and indeed very generally free from, the troubles of subinvolution and all the pains and penalties connected with it—to say nothing of the more serious dangers which attend the puerperal period. He is strongly of opinion, however, that mothers should not suckle their babies during the night, as they require plenty of quiet sleep to enable them to perform the functions properly. Abstention from nursing is, moreover, one great cause of criminal abortion. He carefully notes the circumstances under which a mother ought not to nurse her child,—such as when she suffers from phthisis, cancer, epilepsy, etc. The second part of the paper deals with the subject of wet-nurses, and the author draws up a very strong indictment against them on almost every ground that could be named—statistical, physical, and moral. He shows the difficulty of detecting constitutional weakness and disease—scrofula, for example, or syphilis—in the person of the wet-nurse, even after a careful examination, which is frequently not made; and he points out the deterioration in the quantity and quality of their milk which so frequently takes place under the influence of mental distress and the change to an idle and more luxurious mode of life. He appears to have been peculiarly unlucky, however, in the wet-nurses he has met with, and mercilessly displays what may be called the "seamy side" of wet-nursing, by recounting histories illustrating all the enormities which such women may commit in the way of drinking, drugging, and deceit. He winds up by the strong statement, "that he believes wet-nurses to be an unnecessary and unmitigated evil."—*New York Medical Record*, Nov. 6, 1886.

OVARIOTOMY FOR DERMOID TUMOUR IN A CHILD THIRTY MONTHS OLD.—The very early age in which the operation was performed in this case makes it worth noting. The tumour had been first noticed when the child was eighteen months old. It grew rapidly, and, when the case first came under observation, the abdomen measured, at the umbilicus, 29 inches, and still more at a higher level. It had been twice tapped, under the impression that it was a case of ascites, but only a few ounces of clear fluid could be withdrawn. The operation was performed under strict antiseptic precautions, and the tumour, which was almost entirely solid, or semi-solid, was found densely adherent to the omentum and abdominal wall. The pedicle was tied and dropped. Good reaction followed the operation, but the temperature speedily rose, and the child died twenty-four hours after the operation. The more solid part of the tumour weighed nine pounds and a half, and was composed of numerous cysts, filled with a jelly-like fluid; some of the cysts contained a thick cheesy matter, interspersed with hairs and bone.—Hocks, *American Journal of Obstetrics*, October 1886.

INTUSSUSCEPTION IN CHILDREN.—Three interesting cases form the groundwork of this paper. In the first, the child was eight months old, and about two inches of the invaginated intestine protruded from the anus. The anus was much relaxed. After several futile endeavours to reduce the intussusception, this was at length accomplished by the use of the glass tube of an old-fashioned vaginal syringe. In the place of the piston a narrower tube was passed through the cork; this narrow tube was connected by indiarubber tubing with the nozzle of a *siphon* of Vichy water. Round the large tube, about an inch from its end, was wound a piece of bandage to serve as a shoulder and prevent the fluid and gas being expelled from the anus. The tube was inserted into the rectum, and the Vichy water with its contained carbonic acid was then very slowly admitted into the tube. Subsequently the siphon was inverted so that only the gas could pass up into the colon, and after a short time the tumour was reduced, and the child recovered. The second case was similar, and, being treated in the same way, recovered. The third case, in which the symptoms were less acute and the diagnosis more doubtful, was treated with opium and fomentations, and recovery followed on the third day. In commenting on these cases, the author gives a succinct account of the various forms of invagination, and the treatment to be adopted. He shows that in most cases of intussusception in children the colon alone forms the outside layer or sheath of the tumour, and that the invaginated portion can be acted on by pressure from an injection thrown into the colon. The four characteristic symptoms of the disease are—pain, bloody discharges, tenesmus, and a tumour,—the only diseases likely to be confounded with it being polypus and acute dysentery. The diagnosis is easy in the former case, and may be made with due care in the latter. In most cases there is, moreover, a marked relaxation of the sphincter ani. In dealing with treatment, the author advises strongly the use of rectal injections of warm water by means of a fountain syringe, which can be raised to any required height so as to regulate the amount of pressure per square inch which is used. From a series of experiments made to discover the pressure which would burst the intestine, he found that the child's intestine would bear a force of eight or nine pounds, the adult's from twelve to fifteen pounds, without rupture. When rupture did take place, it happened in most of the experiments about the middle of the transverse colon. A pressure of six pounds to the square inch, which is obtained by raising the reservoir of fluid to about fifteen feet above the patient, can, therefore, be safely borne by children. The pressure should be continuous, and the reservoir should be slowly raised until the tumour gives way or until the above-mentioned limit is reached. Laparotomy is entirely rejected as being unnecessary, and very dangerous in the more recent cases, and quite as fatal as leaving the case to nature in the old-standing and neglected ones. The paper, which extends to some thirty pages, will repay perusal.—Dr W. E. Forrest, *Am. Jour. of Obstetrics,* February 1886.

CARDIAC DISEASE IN INFANCY AND CHILDHOOD.—A short lecture, covering a wide field, and dealing rather with the causes and classification of cardiac disease in the young than with physical signs or the general course of the disease. The congenital diseases of the heart are most frequently found affecting the right side, the acquired diseases the left. All heart disease in young children is essentially atrophic in character, *i.e.*, leads to rapid wasting. Functional disorders of the heart do not arise until the later years of childhood, and are then associated with and caused by overtaxed brains, imperfectly ventilated schoolrooms, and insufficient nourishment: in this connexion an ounce of *tea* seems often to produce marked cardiac symptoms. Organic heart disease is very often associated with subacute rheumatism, the joints in general suffering but little, while the heart is very easily and very seriously affected. The acute exanthemata are often followed by disease of the heart: this is particularly true of scarlet fever, and of those cases of scarlet fever which are complicated with nephritis. Compensation is far more easily established and more permanent in childhood than in after-life; and it is to be promoted by the adoption of the following measures, viz.:—Encourage sleep; comparative rest, *i.e.*, exercise of a mild type, never active; fresh air, good food; promote the surface circulation with baths and gentle massage; give digitalis and iron, both of which drugs children tolerate remarkably well.—T. M. Rotch, M.D., *Archiv. of Pediatrics*, March 1886.

TUBERCULOSIS IN EARLY INFANCY.—Five propositions are laid down with regard to children under six years of age. After six the conditions approach more nearly what is seen in the adult. 1. Pulmonary phthisis, as seen in adults—that is, forming large cavities at the apex, with comparatively little implication of the rest of the lung or of the other organs—is very rare in children, and occurs only in the first few weeks of life. It was only found eight times in 500 sections, and in all these eight cases one or other of the parents was at the time of its birth in the last stage of consumption. This experience agrees with that of Dr Sturges, at the Great Ormond Street Hospital. Tubercle was never found in the fœtus among the many sections made. 2. A so-called general tuberculosis extending over many organs is one of the most frequent post-mortem appearances in early childhood. In order of frequency the organs stand thus: lungs, bronchial glands, mesenteric glands, brain, spleen; less frequently the pleura and peritoneum, the latter almost always associated with intestinal ulceration. In at least half of these cases no hereditary tendency could be made out. 3. The lymphatic glands are more frequently affected by tuberculosis than any other organ—bronchial, mesenteric, and cervical: the first far more frequently than the others. 4. General tuberculosis is generally met with in connexion with other diseases of older date, such as diseases of the bronchial glands, old-standing pleurisies, diseases of joints, caries, etc. This leads to the most important proposition. 5. It is of great moment for the practitioner to bear in mind the conditions under which tuberculosis generally develops itself in early infancy. He should remember, as was remarked above, that hereditary transmission plays a far less important part in early infancy than in later years. Among the most important ætiological factors are measles and whooping-cough. They very frequently precede tubercular meningitis. Pleurisy, again, is often the starting-point of a tuberculosis, far more frequently than is the case in adults. Caries of the bones and diseases of the joints frequently lead to the development of tubercle. In such cases there is less prospect of the development of tubercle if operative interference is withheld. Cold and damp are very powerful causes. General tuberculosis in young children is always a secondary disease.—Dr Flesch, Frankfurt, *Jahrb. f. Kinderheilk.*, B. xxv., H. 3.

THREE ATTACKS OF SCARLATINA IN THE SAME PERSON.—A second attack of scarlatina is a rare event. It has never been seen by such authorities as Hebra and Bouchut, and cannot, therefore, be common. In the case reported here fortunately a written record was preserved of each attack, and the observations may fairly be assumed to be positive and free from error. A very few similar cases have been recorded. The first attack took place in 1868, when the patient was 3 years old; there was only a slight rash, but a free desquamation. The second attack, at the age of 10, was attended by a profuse well-marked rash, with sore throat and swollen glands, and was followed by desquamation. The third attack, at the age of 21, lasted longer than the others; the rash was very abundant, and the desquamation characteristic, the other symptoms being also well marked. The patient was suffering from gonorrhœa for a fortnight before this attack began, and was treated with balsam of copaiba. It was at first thought the rash might be due to the drug. It was therefore continued during the illness, and appeared to exercise no influence whatever on the disease, which followed the usual course of a sharp attack of scarlatina.—N. Woronochin, St Petersburg, *Jahrb. f. Kind.*, B. xxv., H. 1, 2, 1886.

ON DISORDERS OF SPEECH IN CHILDREN.—The disorders of speech connected with injuries and diseases of the brain are not included in this paper. It deals with a form of aphasia which comes on in the course of typhoid fever and scarlatina. This varies in degree from the slow, hesitating, and uncertain use of a few words to complete speechlessness, and in a few cases the aphasic condition has been accompanied with loss of power in the right arm and leg. In the course of typhoid the condition is not very uncommon; it comes on most frequently when the fever is passing off and convalescence beginning, and it is not necessarily confined to severe cases: indeed, the six cases reported all recovered. It seldom lasts more than a week, often less, and disappears suddenly, the children beginning to talk then very fast. The paralysis passes off more slowly, beginning from below upwards, but it does pass off completely. In scarlatina the condition is much rarer, and the results are more serious; the paralysis and the aphasia are more apt to become permanent and the brain to be irretrievably damaged.[1] Owing to the lack of post-mortem evidence in the typhoid cases, it is not easy to be sure of the pathology of this disorder; but it is reasonable to assume the presence of embolism or minute hæmorrhages as its probable cause. One case is given where complete speechlessness came on after a fright, and lasted about twelve hours; speech then returned perfectly. This occurred in a girl of 13 years.—H. Bohn, Kœnigsberg, *Jahrb. f. Kind.*, B. xxv., H. 1, 2, 1886.

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S.Ed.

ON SPURIOUS VENEREAL DISEASES.—This paper by Jordan Lloyd, M.B., occurs in *The Birmingham Medical Review*, October 1886. Of the three venereal diseases, syphilis is the only one which in *every* case originates, directly or indirectly, from a similar pre-existing primary or secondary lesion. The experience of the past twelve years convinces him that gonorrhœa and chancroid have not either of them a specific virus of their own. Both are contagious, but both may, and do, arise from the inoculation of the products of other inflammations. He quotes Bumstead and Ricord, who believe that gonorrhœa may be contracted from a person free from the disease, and gives notes of ten cases illustrative of this view. The last case is one where "excessive dancing and its concomitants appears to have induced urethritis." Next, soft sores are referred to, the majority of which result, undoubtedly, from pre-existing chancroids. Two cases are given to show that sores indistinguishable from chancroids may occur without contagion. In the first case, six weeks elapsed before the sores appeared, and in the second case, the patient had not exposed himself to infection away from his own home. There was no doubt of the healthy condition of his wife. Several cases are adduced to show the "idiosyncrasy" of some individuals, either as regards susceptibility of receiving contagion, or insusceptibility. The following are the summarized conclusions:—1. That a large number of urethral discharges in the male, although sexual in their origin, are not specific. 2. That many penile sores of sexual origin are neither chancres nor chancroids. 3. That idiosyncrasy plays an important part in the contraction of venereal diseases of all kinds.

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[1] In these cases it is most probably due to changes produced by uræmia.

REPORT OF AN EPIDEMIC OF GONORRHŒA CONTRACTED FROM RECTAL COITION (by Dr R. Winslow, *Medical News*, August 14th, 1886).—In a certain institution near Baltimore, a large number of boys, of ages from nine to twenty-one years, are collected, who are, with few exceptions, closely watched, and are seldom allowed out of the sight of an officer. Notwithstanding these conditions, during 1883 and 1884 numerous cases of urethritis developed amongst the boys, the origin of which for a long time remained a mystery. As the number of cases increased, the officers began to unravel the mystery. It was found that sodomy had been practised for a long time. The gonorrhœal epidemic is supposed to have originated by a boy, when on leave of absence, contracting gonorrhœa from a girl. The rectum of a boy, from whom another contracted the disease, was found to be red, painful, bleeding easily, and inflamed. The author inquired of one of the boys, who acknowledged to both active and passive pæderasty, whether he submitted to the approaches of his friends from any gratification which the act gave him. He denied having any pleasure in acting the part of the female, and only allowed it for reciprocal purposes. The epidemic ceased about January 1885, owing to the strict watch kept upon the suspected boys, and the severe corporeal punishment inflicted upon those detected in the act of sodomy, although isolated instances are still occasionally discovered.

Cases of Syphilis without History of Infection.—This paper was read at a meeting of the Louisville Medico-Chirurgical Society, September 24th, 1886, by Dr J. Clark M'Guire. He gave an account of four cases of syphilis where there was absolutely no history of infection.

Discussion.—Dr D. T. Smith—The power of the spermatozoa to carry infection is an interesting question. That it cannot do this is only an assumption. Colles' law, that the mother of a syphilitic child never contracts syphilis from the child goes far towards proving that the mother is already infected.—Dr E. R. Palmer—When cells transmit the germs of disease, the germ is contained in the protoplasm. Spermatozoa are a portion of the nucleus of a cell; a germ cannot exist in a nucleus without destroying its power. Thus any germ will destroy the power of a spermatozoön to fecundate. He does not believe that a mother can give birth to a syphilized child without herself being first syphilized.—Dr W. O. Roberts does not believe that syphilis can be communicated except through an abrasion upon the skin or mucous membrane of the person infected.—Dr A. M. Cartledge—In cases like these reported by Dr M'Guire, physicians paid too much attention to the statements of patients relative to the possibility of their being the subjects of syphilis.—Dr H. A. Cattell did not think it wise to place a patient upon anti-syphilitic treatment, so long as a doubt exists in the mind of the physician as to the nature of a given sore or eruption.—Dr Edward von Donkoff, in making a diagnosis of syphilis, needed no history of circumstances which rendered infection probable in a case of doubtful character. Syphilitic eruptions, being always so well marked, could not be mistaken for anything else by the experienced eye.—Dr M'Guire, in closing the discussion, remarked that syphilis, without history of infection, was far more common than was generally supposed. He warned people against using common drinking cups and privies.—*The American Practitioner and News*, October 16th, 1886.

Part Fifth.

MEDICAL NEWS.

Royal College of Physicians, Edinburgh.—The following gentlemen passed their final examination for the degree in Medicine at the sittings held on 5th December 1886, and were admitted L.R.C.P. Ed.—Allen Forrester Duke, St George's Hospital, London, S.W.; Edwin Deane, Oakhill, near Batte, Somerset.

The Royal Infirmary.—Mr Joseph Bell, F.R.C.S., having recently retired from the acting surgical staff of the Royal Infirmary, a movement was set on foot by the nurses in the Institution to present him with a testimonial as a mark of appreciation of the great benefits they had derived from the weekly lectures he had given for the past twelve years while a surgeon in the Infirmary, and for the kindly interest he had ever evinced in their welfare. Subscriptions were received from many at home and abroad who had benefited from his teaching. The outcome of the effort was that a sufficient sum was raised to purchase a very handsome oak writing table and chair, together with a brass writing set, a letter weight, and a pair of solid silver candelabra. A deputation of nurses from the Royal Infirmary, Longmore Hospital, Royal Hospital for Sick Children, and Princes Street Training Institution, made the presentation at Mr Bell's house, and in doing so handed Mr Bell a volume containing an illuminated address, and giving the names of the various subscribers, among whom was Miss Nightingale. In accepting the testimonial Mr Bell made a suitable reply, in which he stated that it had always been a pleasure to him to help the nurses in every way in his power.

RESULT OF THE POLL UNDER MEDICAL ACT 1886.—The following is the result of the poll in the election to the General Council of Medical Education and Registration of the United Kingdom by Registered Medical Practitioners resident in England, Scotland, and Ireland. In England there were fourteen persons nominated, in Scotland three, and in Ireland four. Those whose names are here printed in bold type are now members of the Council. The figures after the names represent the number of votes given. *England.*—**Mr Claudius Galen Wheelhouse, F.R.C.S., Leeds, 8548**; **Sir Balthasar Walter Foster, F.R.C.P. Lond., Birmingham, 7718**; **Dr James Grey Glover, London, 6614**; Dr Benjamin Ward Richardson, London, 4704; Dr Thomas Michael Dolan, Halifax, Yorkshire, 3063; Dr Moses Prosser James, London, 1223; Dr Edwin Morris, Spalding, Lincolnshire, 986; Mr Daniel Barley Balding, Royston, Herts, 896; Dr Rickard Patrick Burke Taaffe, Brighton, 878; Mr George Brown, London, 865; Mr Robert Henry Spencer Carpenter, London, 731; Mr Henry Bullock, Middlesex, 463; Dr Bernard O'Connor, London, 320; Mr Algernon Newbegin Watts, Sharnbrook, Bedfordshire, 214. *Scotland.*—**Dr William Bruce, Dingwall, 642**; Dr Morton, Glasgow, 596; Dr Sinclair, Dundee, 414. *Ireland.*—**Dr Kidd, 911**; Dr Jacob, 614; Mr Laffan, 195; Dr M'Mordie, 161.

MENTHOL PLASTER.—Burroughs, Wellcome, & Co., of London, have forwarded to us a sample of Menthol Plaster, and having had an opportunity of using it, we can confidently recommend it to the notice of the profession, feeling sure that it only needs to be known to be generally used. It will be found to give speedy relief in cases of headache, neuralgia, and in most painful affections.

OBITUARY.

ANDREW HOWDEN BALFOUR, L.R.C.S. EDIN.

A NOTABLE figure in the medical society of Edinburgh and its environs has passed out of sight—that of Mr Andrew Howden Balfour, of Portobello, who has long been recognised as an admirable representative of the Scotch general practitioner of the best type, and who has left behind him a reputation for skill, sagacity, and benevolence extending far beyond the community in the midst of which he laboured.

Mr Balfour was the third son of a man of sterling worth, Mr Andrew Balfour, who was at one time an army surgeon, and who on leaving the service became a publisher in Edinburgh, and was associated with Sir David Brewster in some of his earliest literary and scientific ventures. He was born in his father's house at St John's Hill, and was favoured, not only in growing up in vital contact with the historic traditions and picturesque impressions of his native city, but in being a member of a family in which genuine devoutness had not proved exclusive of intellectual tastes and liberal culture. In childhood, and throughout his boyhood while attending the preparatory school of the Rev. Mr Andrew, and subsequently the High School of Edinburgh, he lived in a home atmosphere of sincere piety, which imparted to his clear and honest character that calm elevation by which it was ever afterwards distinguished, while he was at the same time imbued with a love of learning and freighted with varied knowledge which proved useful to him on all his life voyage. Even in school days these invigorating home influences bore fruit. He drew around him a circle of warmly-attached friends, and gained credit by his Latin verse and aptitude in mathematics and in mechanical drawing, a subject more rarely studied fifty years ago than it is now. The High School he attended both when it was located in the building which became the Surgical Hospital and when it was removed to the more appropriate pile which it now occupies on the Calton Hill; and he was wont to recall that he was one of the boys, of whom few now survive, who walked in procession from the old to the new building, and that he and the late Bailie Handyside were the only two boys who on that memorable occasion wore tall hats.

At the close of his school days Mr Balfour entered the well-known drug establishment of Messrs Duncan & Flockhart, where he remained for eight years, earning the approbation and esteem of his employers and companions, and acquiring that intimate practical knowledge of pharmacy which often stood him in good stead in his medical work. The late Dr Warburton Begbie used to expatiate on the advantages which he had himself derived from a short apprenticeship in the drug house of Mr Robertson, and the benefits accruing from a much longer experience of the same kind were evidenced in the case of Mr Balfour in the elegance of his prescriptions, in the multiplicity of his pharmaceutical resources, and in the precision and confidence with which he employed all therapeutic agents. But while in the service of Messrs Duncan & Flockhart Mr Balfour did not confine his attention to the preparation and dispensing of drugs. He attended the medical classes of the University and Extra-Mural School, and under the tuition of Dr Boswell Reid became an accomplished chemist. Following in the footsteps of his eminent brother, Professor John Hutton Balfour, he manifested a predilection for botany, which he studied under Professor Graham, and this indeed remained a recreation and a solace to him till the end of his days. When in China he made an interesting collection of the fruits of that country; and when on his professional circuits around Portobello, his quick eye never failed to detect in field or hedgerow any rare plant, the calyx and corolla of which he would immediately submit to an inoffensive vivisection. In his more strictly medical classes he was particularly interested in Pathology, then taught with great acceptance by Professor Henderson, whose clinical clerk he became, and in Midwifery and the Diseases of Women, which Sir James Simpson had just begun to teach.

Mr Balfour's medical studies were scarcely completed when an appointment of an apparently tempting description in a wholesale drug house in Calcutta was offered to him. Acting on the advice of his friends he accepted this appointment, and, as it was necessary for him to enter on it at once, he had to content himself with his surgeon's diploma, and leave Edinburgh without obtaining his M.D. degree, to which he would have been entitled to proceed had it been possible to present himself for the final examination. On reaching Calcutta he speedily discovered that the appointment for which he had sacrificed his degree and his prospects at home was not of the desirable nature which he had been led to suppose, and was not, indeed, one which he could fill, retaining his self-respect. He accordingly resigned it at the earliest opportunity, and, through the kind assistance of Professor Thomas Smith, D.D. (then a devoted missionary in India), and other friends, secured the position of surgeon on board one of the P. & O. Company's steamers, in which he made several trips between Suez and Calcutta. At sea, as on land, Mr Balfour propitiated those amongst whom his lot was cast, and earnest regret was expressed by officers and crew when he announced his intention of withdrawing from the service and settling in private practice in Hong-Kong, where an opening had presented itself.

At Hong-Kong Mr Balfour rapidly acquired a large and lucrative practice, embracing natives, the English colony, and Government officials, and there he would probably have remained permanently had it not been that the health of his wife, to whom he had been married in 1847, suffered from the climate. On her account he returned to Scotland in 1853; but he always maintained a keen interest in China and Chinese affairs, and was a member of the Chinese Branch of the Asiatic Society. He did something to break down those rigid barriers which the Chinese have, to their own loss and ours, erected around their ancient, intricate, and somewhat ricketty civilisation, and shot amongst them a few random rays of a light purer, nobler, and more inspiriting than that of Buddha or Confucius. It was owing to his exertions that the first Chinese student who ever sought instruction in an European university was sent to this country. Dr Wong Fun, who graduated in the University of Edinburgh, and returned to China as a medical missionary, was induced by Mr Balfour to adopt that course, and pursued his studies here under the immediate supervision of Mr Balfour's father.

An energetic temperament like Mr Balfour's could not long brook idleness, so, soon after his return from China, he commenced practice in Portobello, where he has since literally spent his days, for he scarcely even allowed himself the briefest holiday. There he has had an eminently useful and successful career,—a career rich in helpful ministrations to the sick and needy of all classes, in deeds of friendship, in kindly social observances, and in unobtrusive public services; but unmarked by any conspicuous event, save the death of his wife, which happened twelve years ago, and threw a long and sombre shadow over the remainder of his days. It would be tedious to enumerate all the good works in which Mr Balfour, in whom philanthropy was not an occasional impulse but a daily routine, had some hand. We may mention, however, that he was mainly instrumental in procuring the erection of the model working men's homes; that he lectured on co-operation, and established a now flourishing co-operative society; that he founded a local mission of the Free Church, and conducted cottage services; that he took a warm interest in the Mission Sabbath-school, and gave prizes anonymously in the public schools of the town for proficiency in religious knowledge. It is not, however, by his public services, great though these unquestionably were, that Mr Balfour will be best remembered in Portobello. He was a physician first of all and a publicist afterwards, and in the exercise of his profession, which he loved, brought relief and hope and cheerfulness into innumerable households. Quick in noting symptoms, and correct in interpreting them in the light of his scientific attainments and large experience, he was skilful in the treatment of disease; and perhaps his moral qualities helped him in the sick-room scarcely less than his strictly professional accomplishments. Of strong frame and ardent temperament, he had a vivid, far-seeing, sensitive sympathy with his patients, and did the timid and despairing almost as much good by his buoyant manner, genial words, and touches of frankness, humour, and beneficence, as by the well-chosen drugs which he prescribed. If the love of children is an infallible criterion of goodness, then was he largely endowed with that prime quality, for the little ones crowded round him wherever he went, eager to confide in him and listen to his stories. Somewhat angular perhaps in character, unveneered with affectation and without fashionable polish, he was of firm fibre and beautiful grain, admirably fitted for all worthy and useful service. It was impossible to come into his presence without feeling that he was a true man, to converse with him without recognising that he was a thoughtful one, to ask a favour of him without appreciating that he was a generous one. In his veins ran the milk of human kindness, and in his mouth was found no guile. Merry and sanguine for the most part, he knew when to be serious and solicitous; and many a time and oft, in the gravest cases, has he, without overstepping the proper bounds of professional reserve, pointed the sufferer to the Great Physician, who "healeth all our diseases and redeemeth our life from destruction," whose grace and power he had himself experienced.

It is little wonder that a man of Mr Balfour's gifts and character, of his largeness of mind and heart, and readiness to enter into the common business and recreation of every-day life, and into all general topics of rational interest, was highly respected in the town in which he lived. By all sorts and conditions of men in Portobello he was liked and valued, and his daily progress along the streets was a succession of greetings of more than common cordiality. His death has therefore been universally and deeply deplored in the town and district, and the poor, whom he never mocked with medical advice without ensuring, often at his own cost, that they had the material means of giving effect to it, have shown, by their inquiries and demeanour, how fully they realize that they have lost a friend.

About twelve months ago Mr Balfour suffered from an alarming attack of hemianæsthesia, from which, however, he recovered so far as to be able to resume his active professional work, although his friends noticed with regret that his old vigour and buoyancy had scarcely returned to him. Improvement, however, seemed still to be going on, when, on the 9th November, what was at first thought to be a boil, but proved a small carbuncle, appeared on the upper lip. This caused considerable irritation and swelling, which extended over the face, but so little constitutional disturbance at first, that he was able to see two patients in whom he was specially interested on Thursday, 11th November. That evening a slight rigor occurred, and this was followed by great general prostration of strength, which compelled him to keep his bed on the 14th. That day, when his brother Dr T. A. G. Balfour was summoned to assist his sons in the treatment of his case, signs of pleurisy with bronchial râles were discovered. Although in the following twenty-four hours there was, under careful treatment, some mitigation of the general symptoms and marked subsidence of the swelling of the face, his condition was still considered so serious, that his nephew Mr John Duncan and Professor T. R. Fraser were asked to see him in consultation. They felt compelled to take a gloomy view of his situation, which was unhappily verified; for on the 16th November congestion of the kidneys was superadded to that of the lungs, and under these he sank rapidly, dying on the 17th at noon.

Mr Balfour evidently succumbed to that form of pyæmia which is so often associated with carbuncle of the lip, as was pointed out by Mr Ludlow in 1852, and by Sir James Paget in a lecture published in the *Medical Times and Gazette* in 1862. It was thought that as he attended a midwifery case the day after the boil appeared, he might by scratching it, as he was noticed to do repeatedly, have introduced into it septic material; but, as Sir James Paget has pointed out, it is not necessary to suppose any such external source of infection. There seems to be something in the tissue of the lip which especially disposes it when attacked by carbuncle to set up putrid changes.

With the chaste simplicity of Calvinism, which, however, he reserved in great measure for himself—being indulgent to what he regarded as the fancies and formalism of others—Mr Balfour declined by anticipation the public funeral which was at once offered by the inhabitants of Portobello, and directed that no flowers should bedizen his funeral rites. The absence of these things, however, was scarcely noticed; for they were seen through the softening haze of tears by some, and in the mellow light of kindly recollection by all who witnessed them. The services at the house of the deceased were conducted by the Rev. Mr Robertson of the Free Church, Portobello, and the Rev. Professor Smith, who both made touching allusions to his many virtues. The reverent behaviour of the large crowds that lined the streets as the funeral passed along them on its way to the Grange Cemetery, testified to the potent influence which it is in the power of a conscientious medical man to obtain over the people amongst whom he toils.

Mr Balfour was married in 1847 to Alison, daughter of the late Mr Andrew Hunter, merchant, Bristo; and has left four sons and two daughters to mourn his loss. Two of his sons, Andrew and John, are members of the medical profession, and have for some time shared with him his practice at Portobello.

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Part First.

ORIGINAL COMMUNICATIONS.

I.—A SERIES OF ABDOMINAL SECTIONS.

By J. Halliday Croom, M.D., F.R.C.P.E., F.R.S.E., President, Obstetrical Society; Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary; Physician, Royal Maternity Hospital; Examiner in Midwifery, University; and Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 8th December* 1886.)

The series of abdominal sections comprised in the accompanying table represents, practically, fifteen months' work. I bring it before this Society to-night, well knowing that no subject is of greater interest to the gynæcologist than that of laparotomy, and knowing, further, that nothing tends to promote a thorough understanding of any subject than to have both successes and failures honestly recorded and freely discussed. The table shows a series of twenty-two cases in which laparotomy was performed for various conditions. The operations were all done with careful antiseptic precautions—the antiseptic used being a weak solution of corrosive sublimate. The pedicle was secured by the Staffordshire knot. In all of them I have to acknowledge the invaluable assistance of Dr Milne Murray or Dr Freeland Barbour, or both. With regard to the cases of ovariotomy in the table, I do not propose to detain the Society at any length. The operation in the uncomplicated cases was simple, and in those cases where complications, as adhesions and such like, were present, their management is well recognised, and admits of but little comment.

On Case V., however, I may remark that the tumour, a multilocular one, was removed when the patient was suffering from acute peritonitis, the temperature at the time of the operation being 103°.

The operation was prolonged and difficult, lasting over two hours, owing to the amount of recent vascular adhesions. The hæmorrhage was very considerable, and owing to the time required to arrest the bleeding points, the patient was exposed in her weak condition longer than I could have desired. When removed from the table I despaired of her. She gradually, however, rallied. Two weeks

CASES OF ABDOMINAL SECTION—Dr HALLIDAY CROOM.

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after the operation she developed a well-marked phlegmasia in the left leg, which protracted her recovery very considerably. It is now a year since the operation, and she remains well.

I offer no apology for relating Case XVIII. somewhat in detail. The patient on admission to Hospital was found to have a tumour reaching up to her umbilicus, and lying somewhat obliquely across the abdomen, stretching from right to left. The tumour was firm and solid at the umbilicus, but gave the impression of a fluid feeling towards the pelvis. She had a well-marked areola on both breasts; by gentle pressure a serous fluid could be expressed. The linea nigra was well marked over the abdomen. There was no trace of a hymen, and she gave a more or less distinct history of six months amenorrhœa. Auscultation gave no sound whatever over the tumour. It was difficult to make out the condition. She was kept under observation for some weeks. The sound was passed into her uterus, which was found to be retroverted and normal in size. During the weeks she was under observation the temperature varied from 100° to 102°, and the pulse from 100 to 110. The diagnosis arrived at, not without very considerable difficulty, in view of the possibilities of abdominal pregnancy, was a dermoid ovarian cyst, with peritonitis. The abdomen was opened on 10th November, and on reaching the tumour there could be no question about the peritonitis, for the tumour was fixed in all directions by recent vascular adhesions. On opening the tumour it was found to be a semisolid ovarian cyst of the right ovary. The pedicle was very short, and so friable that the Staffordshire knot cut through it, and what remained of the pedicle had to be transfixed and tied again. The intestines were entirely at the upper part of the abdomen, and did not, as in ordinary cases, descend. There was thus left a space, extending from midway between the xiphoid cartilage and the umbilicus to the pelvic brim, entirely empty. The wound was closed in the usual way. The temperature did not for four days rise above 102°. On the morning of second day there was slight dulness in the left flank. On the morning of the fourth day the abdomen was distended and dull all over, the temperature running up to 104°·5. On the afternoon of the same, I opened up the abdomen afresh and withdrew several pints of sero-sanguineous fluid. The following morning the temperature fell to normal. A drainage tube was introduced, and she has since been washed out daily by Dr Foulis' catheter arrangement, which I have found an excellent method of managing this operation. For the first week about a teacupful of pus was washed out daily. The cavity is rapidly closing. The case illustrates the advantage of draining in special cases, and benefit to be derived from perseverance in antiseptic washing out.

I now come to the cases of removal of the uterine appendages. There are seven such cases, and I have this to say about them all, that the operation was not one of choice but of necessity. In five cases, X. to XIV. inclusive—viz., the two cases of hæmato-salpinx, two bleeding fibroids, and the bleeding uterus—the operation was undertaken to save the patient's life. In two it was performed, the patients being sufferers for five and twelve years respectively, and at their own urgent request. With regard to the fibroids, the first was the size of a cricket ball, the second the size of a fœtal head. In both cases the operation was uncomplicated, and in both the result entirely satisfactory. Both cases have menstruated since, but the hæmorrhage has been slight and painless. In one case where the appendages were removed for a "soft bleeding uterus"—I have called it so because I failed to find any trace of a fibroid—the operation was performed in July last, and the patient since has had two rather profuse hæmorrhages. She is able for her work, and as the second was less than the first, and a considerable interval, there is good reason to hope that it will shortly leave entirely.

A great deal is constantly being said about the loss of sexual appetite. That is a matter I did not inquire into. It was no business of mine. If they have lost their sexual appetite I am surprised; for in their enfeebled condition I should scarcely have expected that any existed. But still if it did, it is no affair of mine any more than it is the business of a surgeon to inquire into the sexual appetite of his patient after removal of the testicle. The removal of the ovaries and tubes were necessities, and therefore, as a practical man, I have nothing to do with what becomes of the sexual appetite. In cases where there is any doubt as to the propriety of the operation this may be an element, but in the present cases, which were undertaken of necessity, no such question presented itself.

Case IX. was typical as an illustration of gonorrhœal infection. She had been married for twelve years, and contracted gonorrhœa shortly after her marriage; ever since she had been a constant sufferer; sterility, with dysmenorrhœa and inability to perform her marital function. Per vaginam the uterus, ovaries, and tubes were matted in one solid mass. Bimanually, under chloroform, the uterus could be felt lying forward, fixed firmly on either side by two solid lumps occupying each broad ligament. I removed the ovary and tube on the left side with great difficulty, they were so firmly adherent. The ovary was enlarged and cystic, and the tube much thickened and containing pus. I removed the right tube after much trouble, and found it acutely inflamed and thickened. The corresponding ovary I could not remove; it was small and firmly adherent; I therefore left it. The operation was a difficult one, the roof of the pelvis being completely closed in by adhesions.

There are three points about this case to which I specially wish to draw attention. 1st, The abdominal wound did not completely heal, leaving a small sinus at the lower angle. Through this sinus there has been a hæmorrhagic discharge at each menstrual period.

The wound is perfectly free from any sanguineous discharge from its edges. The hæmorrhage is not, therefore, in any sense vicarious, but wells up from the pelvis through a sinus of two inches in length. This discharge has been regular every menstrual period, and simultaneously with and in addition to the ordinary menstrual discharge per vaginum. Both my assistant Dr Haultain and I have watched the case with care, and seen it welling up through the sinus. I would have scraped the edge of the sinus long ere this and healed it, were it not that we were anxious to watch and, if possible, trace the hæmorrhage to its seat. 2nd, Menstruation has continued with regularity ever since, but without any pain or distress, and that although one ovary still remains in the pelvis. 3rd, The patient got immediate and continuous relief, and has abundantly expressed before my class her opinion that her relief was well worth the risk. I mention this fact because the relief from removal of the appendages is not usually immediate—complete immunity from suffering not resulting for often a year and more. I mention this because I think this was a typical case where removal was indicated and a cure reasonably expected—1st, because of the clear specific history; 2nd, because the woman was a strong healthy woman, without any nervous element in her case, and absolutely well but for this pelvic distress. I venture to believe that in those cases where the fixation is the result of simple inflammation after a miscarriage or labour, the benefit is not so soon apparent, and perhaps not well marked, as in those of specific origin.

Cases XI. and XII. were illustrations of the condition known as hæmato-salpinx. They were as follows:—

Case XI.; married; one child eighteen months before admission. The labour was tedious. The menstrual discharge returned four months after, and continued regularly without pain until three months before admission, when it ceased for two months, and during that period she suffered from very severe pain in the left side, which radiated round to the back. It was so bad that, if her circumstances had permitted, she would not have gone on with her work. A month before admission she had a red discharge, which she attributes to having run down Leith Walk. The bleeding began shortly after her exertion, and continued till she came to the Infirmary and received some medicine. Two days after the hæmorrhage commenced she was seized with severe pain, which necessitated her keeping her bed. She had morning sickness at the time. She was seen by Dr Barbour, who entertained the possibility of extrauterine pregnancy, and very kindly sent her to my ward.

On June 15 she was admitted to Ward 28; when, on examination, the cervix was found somewhat softer than normal. The uterus was enlarged, and lay in a straight line up from the cervix and immediately behind the symphysis. Bimanually a tumour could be felt in the left broad ligament, which appeared to be connected with the uterus; it could be felt extending above the pelvic brim, and had a semi-fluctuating feeling.

A fortnight later the cervix appeared to have become softer. The uterus was pushed over to the right, and its cavity measured 3½ inches. The fundus lay on a level with the right anterior superior iliac spine, and at a distance of 4½ inches from it. The upper limit of the tumour was 2½ inches below the umbilicus, and was the only part which could be defined by abdominal palpation.

From the end of June till the middle of July the tumour gradually increased in size, so that it could be made out by palpation, and a distinct souffle could be made out. The red discharge showed itself again in the beginning of July, and the pain became less troublesome. On examination of the discharge no decidua could be found. This case presented all the symptoms and signs of an extrauterine pregnancy. The cessation of menstruation, irregular hæmorrhages, enlargement of uterus, and pain, along with the souffle, went to support this, and it was with the expectation of finding such a condition that the abdomen was opened. The tumour, which consisted of the enormously dilated proximal end of the Fallopian, with the distal end thickened, and the fimbriæ spread out over it, was very adherent, and burst in my attempt to remove it. When I first felt it, it was about the size of a fœtal head, but on extraction after rupture it was not bigger than a good-sized orange. I was under the impression that it was a tubal pregnancy, and that the ovum had escaped into the abdominal cavity. This, however, was a mistake. Dr Barbour very kindly examined the preparation, and can find not a trace of any decidua or anything to indicate pregnancy. The case must, therefore, be placed among those of hæmato-salpinx, this being an unusually large one, possibly unique.

The second case of hæmato-salpinx was that of a young woman aged 22, married, suffering acute, sometimes excruciating, pain in the left side, and uterine hæmorrhage for two months. She had been perfectly regular previous to the hæmorrhage, which began at a menstrual period, and has continued daily without any intermission since. She was exceedingly anæmic, and constantly requiring opiates. The local condition,—The uterus retroverted; right ovary lying low down, and corresponding tube very tender and dilated; left tube as large as a sausage, and coiled round uterus to the back; left ovary not distinctly made out.

For two months after admission I perseveringly tried hot water, ergot, rest, etc., but she continued to bleed daily in spite of all. Therefore, after duly explaining the operation to her, I operated, and found the left tube much larger than my examination gave me to believe, probably as big as a good-sized orange. It ruptured during removal. The left tube was as thick as the little finger. As the ovaries could be of no service without the tubes, I removed them also.

Although removal of the ovaries in a young married woman of 22 is very much to be regretted, in this case it was an operation of absolute necessity, as everything had been tried for two months without success. The patient was unable to get out of bed, and was quite blanched with hæmorrhage, which, from the time it commenced until the operation, had gone on for four months.

In one case the abdomen was opened for purulent peritonitis. The case was as follows:—

Mrs M., 32, one child. She complained on Tuesday, 6th January 1885, of severe pelvic pain. She was some days past the time for her menstrual period, and the pain was regarded as dysmenorrhœa. The pain was continuous and extreme, except when under the influence of narcotics. On the night of 10th January the patient showed symptoms of collapse. Temperature rose up to 103°, with a quick, sharp pulse, and symptoms of general peritonitis developed themselves. There was swelling and hardness over the abdomen, with dull percussion. The menstrual flow began on the 11th, and lasted for thirty-six hours. On 29th of January the abdomen was found distended with fluid, the temperature and pulse remaining high. So great was the distension that Dr Macpherson aspirated, and drew off 4½ pints of sero-purulent fluid. On the 7th of February the effusion was as great as formerly, and about the same quantity of pus was removed by aspiration.

On February 14th, along with Professor Chiene, and Dr Bruce of Dingwall, I saw her at Bonar Bridge, and aspirated, removing a few pints of pus. It was arranged that she should be brought to Edinburgh, where, through the kindness of Mr Fasson, she was accommodated with a room in the Hospital. On the 24th February, with the assistance of Professor Chiene and Dr Milne Murray, I opened the abdomen and removed 2 quarts of pus. The abdomen was freely washed out with weak carbolic until the water returned perfectly pure. A drainage-tube was introduced, and daily for a fortnight the cavity was washed out. The patient made an uninterrupted recovery, and returned home in a month quite well.

The case of Mrs H., No. XX., is worthy of special note. When I saw her first, in conjunction with Dr Donald Murray, I found a well-marked tumour extending to near the umbilicus, dull all over, and giving evidence of distinct fluctuation. The uterus was of normal size, and somewhat drawn up in the pelvis. I could not palpate the ovaries. The patient gave a history of regular menstruation, lately rather profuse, and had observed the tumour growing for six months. The patient came up to Edinburgh for operation. I diagnosed a simple uncomplicated ovarian tumour with thick walls. My diagnosis was wrong—entirely so; yet I confess that I do not know even yet how I could have arrived at any other conclusion. I opened the abdomen on the 20th October 1879, and on reaching what I supposed the wall of the cyst I introduced my hand into the wound, and, passing it round, felt the tumour free of adhesions in all directions. The surface of the tumour had all the appearance of an ovarian cyst. I accordingly proceeded to withdraw the fluid, but none flowed through the aspirator. I therefore arrived at the conclusion that the tumour was solid. I made an incision into it, and my astonishment was sufficiently great when several coils of intestine at once slipped through the opening. The mistake in the diagnosis was evident, the apparent cyst being the thickened omentum. With very considerable difficulty I succeeded in replacing the intestine, and closed both wounds. The patient made an excellent recovery.

Two years later the patient was brought to St Luke's Home, presenting a most remarkable appearance. She had her abdomen distended with a solid tumour of such dimensions that the woman herself seemed but an appendage to the tumour. When she sat down on a chair the abdominal wall touched the floor. She was emaciated to a skeleton. She lived in great distress a year longer, and died of exhaustion. Dr Alexander Bruce made a post-mortem, and with much trouble removed the huge mass. The tumour was neither uterine nor ovarian, but developed from the thickened omentum, into which I had opened three years previously. The structure of the tumour has been carefully examined by Dr Barrett, whose report I append.

Microscopic Examination of Tumour of Abdomen.

Sections of the tumour examined under a low power show that it is largely made up of bundles of fibres, which interlace in every direction, and showing no definite shaped spaces between them.

The bundles are very loose, and the spaces under this low power resemble those seen in all young growing fibrous tumours, in that they contain scattered fibrils and a few cells of various shapes.

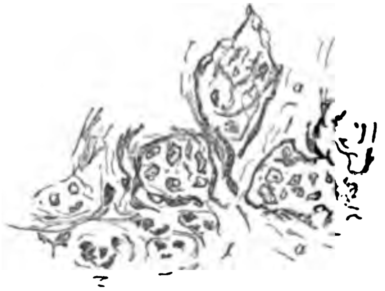

FIG. 1.—Transverse section of some of the dense fibres, a few (*a*) being cut longitudinally. In (*b*) the fibres are very clear, and the nuclei of the corpuscles are seen somewhat stellate, due to pressure between the fibres. × 150.

Stains.—All the sections stain with difficulty, even those cells which appear to be active taking on but feebly any of the ordinary staining agents.

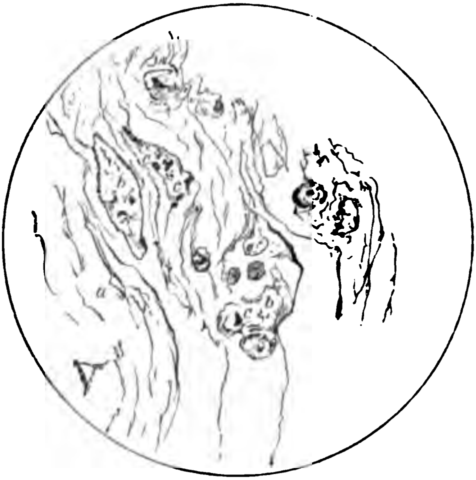

FIG. 2.—Preparation stained in perosmic acid; shows the corpuscles between the fibres, the dark particles being fat in them, and was stained black. (*a*) Fibres; (*b*) corpuscles; (*c*) fatty particles. × 550.

The bundles of fibres at first sight appear to differ—some resembling unstriped muscle fibres, others fully formed fibrous tissue; others appear more cellular and myxomatous. Under a power of 300 diameters these various bundles present the following characters:—

1*st.* Those resembling unstriped muscle fibres—

(*a.*) *Stained with Picro-Carmine. Mounted in Farrant Solution.*—Each bundle is made up of several constituents, and these are composed of fibrils or cells of considerable length, and which, in the main, take on the stain, as do bundles on unstriped muscle fibres; but failing in the nuclear stain, as only with difficulty can nuclei be detected, and then it is doubtful whether these are situated in or upon the fibres.

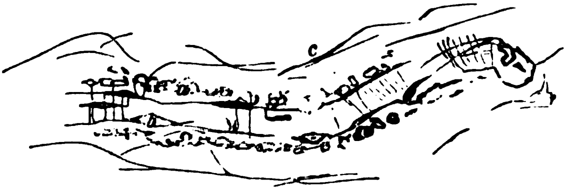

FIG. 3.—(*a*) Transverse sections of circular fibres of middle coat; (*b*) endothelial cells lining the vessel; (*c*) fibres, external, which are continuous with fibres of tumour. Outline of arterial branch in the tumour. Its walls show three coats, the middle coat being distinctly muscular. × 150.

(*β.*) *Stained with Logwood. Mounted in Balsam.*—The nuclei are somewhat better seen, and in all cases appear applied to the fibrils not included—the formed material in this stain resembling white fibrous tissue, and the nuclei being oval or rounded instead of rod-shaped, as one would expect were they muscle cells.

(γ.) $\frac{1}{12}$ *per cent. Solution of Osmic Acid. Mounted in Farrant Solution.*—The fibrils are clearly brought out, and it is evident that they are much more cellular than was to be made out in sections stained by the last two methods. The nuclei are oval or rounded, and a small quantity of protoplasm around them; these are attached to the fibrils, and, in the majority of cases, small fatty particles may be detected in the protoplasm, indicative of degeneration of these cells.

Eosin and other stains confirmed the above, especially Picro-Alum Carmine.

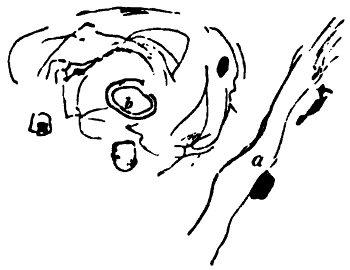

FIG. 4.—Sections, longitudinal (*a*), transverse (*b*), of young bloodvessels occurring in the areas of least density, which are made up of somewhat widely separated delicate fibrils and large irregular cells. × 200.

2nd. Those presenting all the characters of fully formed fibrous tissue as seen under a low power. These, under all stains and under a high power, were found to be typical white fibrous tissue bundles, though, in some cases, more cellular than would at first sight be thought.

3rd. Those which partake of both characters are found to be fibres somewhat younger and more cellular, the two forms being intimately blended.

Bloodvessels are very numerous in all the sections, and, for the most part, have well-formed walls, though here and there, in the looser structure, are some of embryonic structure. True muscular walls could in some places be seen, and in one section two distinct elastic laminæ were visible.

The spaces between fibres contain delicate fibrils interlacing, and these for the most part are continuations of large cells; as processes these cells, in many cases, present several nuclei, and although young, many (when examined in osmic acid stained sections) are found to be degenerating. They resemble the large branching cells found in sarcomata and young fibromata.

Nowhere are there any evidences of the fat cells visible in the normal omentum. No glandular tissue to be seen.

Conclusion.—1. That the tumour is one of a connective tissue type. 2. Rapidly growing in some parts. 3. That the chief tendency is the development of fully-formed fibrous tissue, but that this is often not attained, due to fatty changes of a degenerative character, in the rapidly-growing cells. 4. The tumour may be called a "fibro-sarcoma," using the term as one intermediate between sarcoma and a true fibroma.

With reference to the two cases in which death occurred. No. XXI. was the case of a woman, 45 years old, whom I found in Ward 28 when I took over charge. Her condition on December 28, 1885:—Lower portion of abdomen was distended to the size of a six months' pregnancy. Distension more marked on left side than the right. Measurement round most prominent part, 30¾ inches. Percussion dulness in mesial line to about one-half inch above umbilicus. Flanks clear. Fluctuation and fluid thrill felt over tumour. Uterus displaced to right and downwards, of normal size. Posteriorly there are tender nodular fixed masses to be felt in the pouch of Douglas. The tumour was irregular in its outline, nodular, and at some points tender. There was free fluid outside the tumour. There could scarcely be any doubt as to the malignant nature of the tumour. This was explained to the patient, and operation was discountenanced. During the two following months the tumour increased in size, and the measurement in March, round the most prominent part of the abdomen, was 35 inches. The whole abdomen was tender, and she suffered from constant vomiting.

On 22nd April 1886, partly at the patient's urgent request, and partly to relieve her pressing symptoms as well as to give her at least a chance, I opened the abdomen, but found it impossible to separate the cyst wall. Within the cyst were found the intestines here and there adherent to it. The walls of the cyst were indefinite, and broke up on any attempt to interfere with them. Nothing could be removed except pieces of degenerated omentum. The abdomen was washed out with weak carbolic, and drained. After the operation she passed a good night without morphia, and lived without pain, in distinct comfort, for three weeks, dying ultimately from exhaustion. Although the case ended fatally, yet, from the relief the patient experienced, and the fact that death was imminent before the operation, and cure impossible, I should be inclined to open and drain any similar case, simply by way of ameliorating the symptoms.

Case XXII., which also ended fatally, was a case of hysterectomy, which presents the following record:—I saw her, with Dr Milne Murray, in the spring of 1884. She was a single woman of 41 years of age, and suffered for eighteen months from profuse menorrhagia and metrorrhagia. The uterus was enlarged to about 3½ inches, and contained probably a fibrous polypus. She was admitted to St Luke's Home. The cervix was dilated with tupelo tents, and the cavity of the uterus explored, when on its anterior surface was found an absolutely sessile fibroid tumour, about the size and shape of half a Tangerine orange. Of course removal was impossible; and hoping that, as is often the case, the mere dilatation might check the hæmorrhage, she was allowed to go home to the country. Some months afterwards Dr Murray saw her in the country, and found her blanched and almost cachectic from repeated and profuse hæmorrhage. She was brought back to St Luke's Home, when, on examination, we found that the uterus had increased to the size of a four months' pregnancy. Obviously the only chance left consisted in removal either of the uterus or ovaries.

The abdomen was opened, and, after considering the ease with which the uterus could be drawn out and secured, and the absolute necessity for preventing any recurrence of hæmorrhage, we determined to remove the uterus. Further, the ovaries were deep down and fixed. The tumour was drawn up, and the pedicle secured with a Tait's clamp. The patient died the following day, from shock.

This case is to me a matter for much regret, because my clear duty, when I first saw her and found the tumour irremovable, and when the uterus was still small, was to have removed the appendage. The lesson I learned from that case I have acted on since, as reference to my table will show.

I have detained the Society much too long with the details of these cases; for this I have to apologise. I have ventured to read this series because I believe it the duty of those who have the opportunity of performing these operations to bring any experience they may gain before the Society, with a view to discussion. *2nd.* Because, in the present day, when the propriety of many of these operations is being roundly canvassed, a record of individual cases is all the more necessary.

II.—ON THE DISAPPEARANCE OF THE AORTIC REGURGITANT MURMUR.

By Robert Saundby, M.D., Physician to the General Hospital, Birmingham.

(*Read before the Birmingham and Midland Counties Branch of the British Medical Association, 9th December* 1886.)

The mutability of murmurs originating at the mitral and tricuspid orifices has been for a long time well known, and was excellently illustrated a good many years ago by the late Professor W. R.

Sanders in this Journal.[1] In the same paper he expressed the opinion that murmurs originating at the aortic orifice do not undergo similar variations, but are always to be heard by a well-trained auscultator. I had always fully accepted this doctrine, subject only to a faint remembrance of a protest emanating from Professor Gairdner of Glasgow; and though I, in common, I suppose, with other physicians who follow their cases to the post-mortem table, have had sometimes to hear aortic valves condemned as incompetent over which during life I had failed to detect a murmur, I did not venture to formulate a doubt of its soundness until a recent experience supplied me with evidence which I did not hesitate to accept.

On 8th February 1885, Dr Alfred Harvey brought to consult me at my house Mr W., aged 48, who complained of sharp shooting pains in his legs and thighs, dimness of sight, slight palpitation, loss of appetite, and indigestion. There was no headache or giddiness. The patellar reflexes were present. A diastolic murmur was audible in the aortic area, propagated down the sternum. The urine was free from albumen and sugar.

In the summer of 1885 he began to suffer from dyspnœa and dropsy, and being reduced in circumstances from his long illness, on 9th June 1886—that is, a year after the commencement of the more urgent symptoms of heart disease—he was admitted into the General Hospital under Dr Wade, who kindly transferred him to my care. (Dr Harvey informs me that the murmur had remained audible during the whole of the interval between my first seeing him and some time shortly before his admission to hospital, but he is unable to fix the precise date.) After his admission the following note was made of the state of the heart:—The apex beat is in the sixth left intercostal space, ¾ inch to the left of the vertical nipple line, while to the right of the sternum the area of dulness is increased. There is a systolic murmur at the apex, followed by an accentuated second sound. At the base the second sound is *reduplicated,* and accentuated in the pulmonary area. There is no aortic diastolic murmur. The radial pulse is regular, small, and the artery hard. There is general anasarca, with effusion into the bases of both pleural sacs, œdema of the lungs, and the urine, which is scanty, contains a trace of albumen, 1·5 per cent. of urea, and deposits granular casts.

I need not go into the details of the progress of the case. His breathing assumed the Cheyne-Stokes type, his mental faculties became obscured, and he died comatose on 11th July, rather more than a month after his admission.

As I had placed a copy of my private notes on the history of the case, it may be supposed that it was a matter of considerable interest to me, and to our resident medical officer Dr. Wilson, to try to detect some sign of the lost aortic murmur. In fact, it was listened for repeatedly by myself and by many others, but at no time could it be heard, and I attended the post-mortem examination with more than usual interest. This was performed by our pathologist Dr Crooke, and the following is his account of the state of the heart. It weighed 17 oz., the aorta was dilated, its inner surface atheromatous, and its valves *incompetent.* The left ventricle was enormously hypertrophied, its muscular wall showing patches of *interstitial myocarditis,* with some grayish or yellowish cloudy mottling. The coronary arteries were dilated and atheromatous. The mitral orifice was narrowed, and its valves a little thickened. The right auricle was much distended with blood-clot. The right ventricle was not dilated.

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[1] *Edinburgh Medical Journal*, January 1869.

There was no doubt of the incompetence of the aortic valves. I could not but believe that the murmur I had noted was due to this incompetence, and had disappeared during the later period of the disease. Having obtained this proof of the disappearance of an aortic regurgitant murmur, I felt able to place a similar interpretation on the following cases:—

CASE II.—J. W. M., aged 30, was admitted on 4th April 1885, complaining of swelling of the legs, cough, and shortness of breath. The cough began two months previously, but the dropsy had existed only nine days before admission. There was a history of two attacks of rheumatic fever. The heart's apex was in the fifth left interspace, diffused and heaving. There was a harsh systolic murmur, loudest at the apex, but traceable round to the angle of the scapula. The second sound was accentuated at the apex and left base, but less loud in the aortic area. There were the physical signs of œdema of the lungs, and the urine was scanty and albuminous, depositing a few hyaline casts. On the 12th of April, that is, on the ninth day of his residence in the hospital, for the first time a double soft murmur was audible to the right of the sternum, the apical harsh systolic murmur also persisting. He died the same night while trying to get out of bed in a state of delirium.

At the autopsy the pericardium was found to be universally adherent, and the heart in its sac weighed 34 oz. The *aorta* was slightly atheromatous, and its valves *incompetent.* The mitral orifice admitted three fingers, and its valves were thick and stiff. The wall of the *left ventricle was thick, but pale and soft.* The right side of the heart was dilated and hypertrophied, and the tricuspid orifice admitted four fingers.

CASE III.—W. R., aged 20, was admitted on 9th February 1885 with general dropsy. He had had ten attacks of rheumatic fever, and the dropsy had been gradually coming on for six months before admission. The heart's apex was in the sixth left interspace in the anterior axillary line. The first sound at the apex was obscure, but there was no distinct murmur. The second sound was loud and clear. In the tricuspid area there was a murmur replacing the first sound. The pulmonary second sound was accentuated. The pulse was small, compressible, and regular. The daily quantity of urine was 30–40 oz. It was slightly albuminous, and deposited a few oxalate of lime crystals and hyaline casts. No other murmurs were ever heard, and the diagnosis attempted was tricuspid and mitral incompetence, with dilatation of the heart, degeneration of the heart's wall, adherent pericardium, and secondary congestion of lungs, liver, spleen, kidneys, etc. He died on 13th February, having been in hospital only five days; and the autopsy was made on the following day. The heart weighed 24 oz., and *the pericardium was attached to it* by old œdematous adhesions. The whole organ was greatly hypertrophied. The aorta was smooth and elastic, but *its valves were thickened and incompetent.* The mitral valve was very much narrowed and slit-shaped, admitting only the tip of the forefinger. The right side of the heart was full of clots. The tricuspid orifice was dilated, but the valves were healthy.

CASE IV.—T. S., aged 40, was admitted with dropsy of the lower extremities and tightness of the chest. He had been ill only a month, and the first symptoms were swelling of the face and hands, with scanty urine. There was no history of rheumatism except in the way of vague pains. The apex beat of the heart was in the fifth left interspace. There was no murmur. The aortic second sound was audible, but is noted as being *not* accentuated. His urine was scanty, 20–30 oz. daily, 1025, nearly solid with albumen, containing blood, 1·3 per cent. of urea, and depositing hyaline, epithelial, granular, and blood casts. The case was one of Bright's disease, and he died of cardiac failure on April 7th, ten days after admission. At the post-mortem examination the kidneys were large and mottled, with slightly adherent capsules, but the *heart* weighed 17 oz. The right cavities were stuffed with blood-clot; the tricuspid valve admitted four fingers. The aortic valves were not quite competent, but were adherent, thickened, firm; in parts calcareous. The mitral orifice admitted only the tips of three fingers; its valves were yellow, thickened, and shortened. The wall of the heart showed a moderate degree of *brown atrophy* of its muscular fibres.

The last two cases may be regarded as instances of simple failure to detect a murmur; but if there is no antecedent improbability of the absence of a murmur in spite of the existence of incompetence of the aortic valves, I believe they afford additional illustrations of this fact. Case II. is an instance of the appearance of a murmur while the case was under observation, though it too depends for its probability upon the first case. It is right to state that all the accounts of physical signs are from my own personal observations, having been either noted in my own handwriting or written down to my dictation.

On consulting Professor Gairdner's paper,[1] to which I have to thank him for a reference, I found that his case was that of a man in whom a diastolic murmur made its appearance during his stay in hospital, and disappeared again after a few days. The autopsy showed incompetence of the aortic valves. In a subsequent communication Dr Gairdner repairs an omission by quoting a case mentioned by Walshe,[2] in which a diastolic murmur was replaced by a systolic murmur. These are the only references that I know of in medical literature.

[In the discussion which took place on this paper Dr Lewis Hawkes, house-surgeon at the Children's Hospital, mentioned the disappearance of an aortic regurgitant murmur which had occurred in the wards of Professor T. R. Fraser of Edinburgh while he was acting as clinical clerk. Dr J. A. Lycett, of Wolverhampton, writes to me (9th Dec. 1886) as follows:—"I hoped to get over to Birmingham to-day to hear your paper, in which I should have been interested, having met with several similar instances, and have now under treatment a gentleman with atheromatous arteries, some kidney change, and hypertrophied left ventricle, in whom for several years a loud, diastolic, basic murmur was heard, verified by Sir Walter Foster, in whom now no murmur whatever is to be made out beyond the exaggerated ventricular sound from obstructed circulation through the arteries. He is subject to anginal attacks, and I cannot but look upon his life as very uncertain."]

The explanation accepted by both Walshe and Gairdner is that changes occur in the valve. In Walshe's case he found a mass of vegetations which had blocked the valve, and this certainly affords a sufficient explanation. But in none of my cases was there any such evidence, and in Professor Gairdner's case the valves were found post-mortem to be *incompetent*. The explanation I suggest depends upon the general state of the heart, and is strictly analogous to that accepted for the disappearance of mitral murmurs. A buttonhole mitral valve presents physical conditions very similar to those of stiffened and incompetent aortic valves. In each case we might expect, *a priori*, to hear a diastolic murmur; yet when the heart is weak and the circulation feeble we know in the case of the mitral valve that no murmur may be audible. After rest and suitable treatment such a mitral murmur may appear, just as the aortic diastolic murmur did in Case II.

In each of my four cases the heart was *dilated*. In the first there was "interstitial myocarditis," with "grayish or yellowish cloudy mottling;" in the second the wall of the left ventricle was "pale and soft," and the pericardium was "universally adherent;" in the third there was adherent pericardium; and in the fourth there was brown atrophy of the muscular fibres. In every case, moreover, the mitral valve was more or less diseased, so that we had all the conditions present for the propulsion of a very feeble stream of blood into the aorta. Under such circumstances there would be a very feeble aortic recoil, and notably in the first case, but also in some of the others, the coats of this vessel were stiffened and weakened by atheroma.

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[1] *Brit. Med. Journal*, 1872, vol. i. p. 334.

[2] *Diseases of the Heart*, 3rd edition, 1862.

In short, my explanation is that the amount of regurgitation in these cases is so slight, and the stream of regurgitant blood passes the valves under such low pressure, that it is unable to determine an audible aortic murmur.

In the consideration of the facts disclosed in this paper the means employed for detecting sounds is of importance, I therefore mention that I use a binaural stethoscope and an ordinary wooden one, and that I am accustomed to listen to the heart sounds with both.

III.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By Byrom Bramwell, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; Additional Examiner in Clinical Medicine in the University of Edinburgh, etc.

XI.—*Glioma and Cyst of the Left Frontal Lobe, with extreme Hyaloid Degeneration of some of the Bloodvessels of the Tumour.*

(*Continued from page* 623.)

The post-mortem examination was made on March 20th; the head only was examined.

The scalp, skull-cap, and outer surface of the dura were natural; the internal surface of the dura was adherent over the left frontal lobe, which was markedly swollen and considerably larger than the right. There was no appearance of any general increase of the intracranial pressure—no flattening of the convolutions, no effacement of the sulci; in fact, the convolutions of the brain generally were rather atrophied than flattened, the sulci wide, and the subarachnoid fluid in some excess.

On cutting up the brain the greater portion of the left frontal lobe, or to speak more precisely, the anterior two-thirds of the first and second, and the anterior half of the third left frontal convolutions, with the associated portions of the subjacent white matter, were completely destroyed by a new growth; while the posterior third of the first and second, and the greater part of the posterior half of the third left frontal convolutions, were softened, œdematous, and, to some extent, infiltrated by the lesion (see Fig. 41). The greater portion of the tumour consisted of a soft glioma, but embedded in its posterior end, and projecting for some distance behind it, there was a cyst as large as an average size hen's egg.

This cyst, which contained a colourless but slightly turbid fluid, was bounded above and in front by the gliomatous tissue of the tumour, below and behind by the anterior cornu of the lateral ventricle, and behind by the white matter of the centrum ovale.

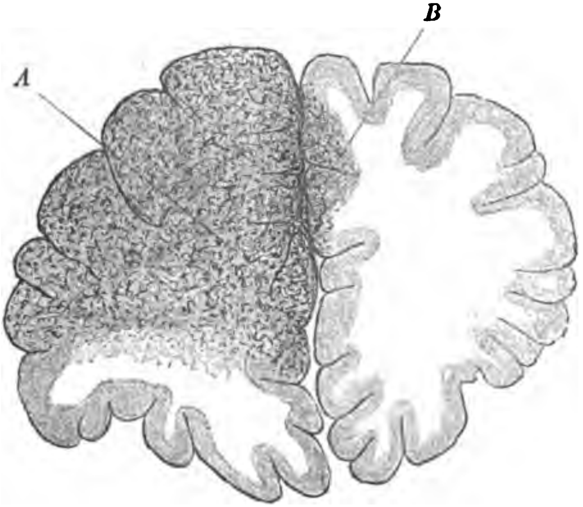

FIG. 41.—*Transverse Vertical Section through the Frontal Lobes in the case of Miss A., showing the position of the lesion.* Drawn from memory.

A points to the lesion in the left frontal lobe, and *B* to a portion of the right frontal lobe affected by the direct extension of the tumour.

The posterior end of the cyst was in close contact with the lenticular nucleus and head of the corpus striatum, and must have been in a position to have exerted pressure upon those fibres of the centrum ovale which pass downwards under the name of the motor portion of the internal capsule. The wall of the cyst was formed by a tough but transparent membrane, which was the only structure which divided the cavity of the cyst from the cavity of the lateral ventricle; in this semi-transparent partition a most beautiful network of bloodvessels was seen.

Several recent hæmorrhages, the largest about the size of a large walnut, were present in different parts of the tumour; and the pigmented remains of other hæmorrhages of old date were visible, both to the naked eye and on subsequent microscopical examination, in other parts of the new growth.

The enlarged and diseased left frontal lobe bulged across the middle line, and at one spot where it impinged upon the right frontal lobe (see B, Fig. 41), the tissue of that (the right) lobe was diseased, the result without doubt of a process of direct extension or auto-inoculation.

The other portions of the brain were free from disease. The optic nerves were to the naked eye perfectly normal.

On microscopical examination, the tumour was found to be a glioma, or perhaps more correctly a glio-sarcoma.

The cells were for the most part round or oval, and arranged in dense masses (see Figs. 47, 51, 54). In some parts, more especially in half-cleared-up carmine or picro-carmine preparations, and in sections stained with picro-carmine, teased out, and mounted in Farrant's solution, the glial threads or fibres were well shown (see Fig. 42). In those portions of the tumour into which recent hæmorrhages had occurred, large round cells, which appeared to be distended with clear colourless contents, which did not stain pink with picro-carmine, were found. Some of these large swollen cells contained a single small round nucleus, others contained red blood corpuscles which they had apparently digested (see Fig. 43). The impression left upon my mind was that the large swollen cells with colourless non-staining contents had previously contained red blood corpuscles, which had become fused into a single uniform mass.

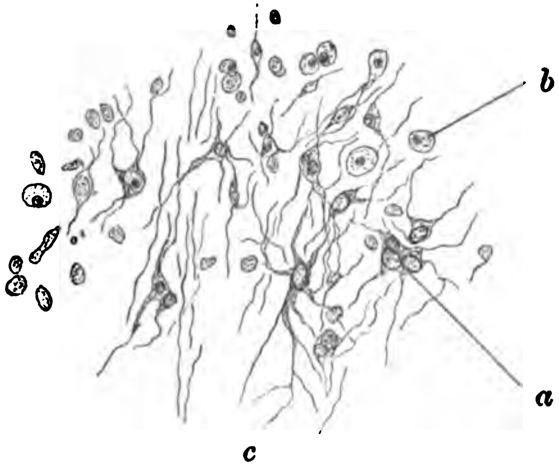

FIG. 42.—*Camera Lucida Drawing of a Microscopical Section of a portion of the Cerebral Tumour in the case of Miss A., showing Gliomatous and Sarcomatous Cells and Fine Fibres. Stained with Picro-carmine. half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam.* (*Magnified—Hartnack, oc*, 3, *obj*. 8.)

a, Glial cell containing three nuclei; *b*, round sarcomatous cell containing nucleus; *c*, fine glial fibres.

The tumour tissue was most vascular—indeed, in some places the tumour appeared to consist of a dense network of minute vessels, in the meshes of which the glial cells were situated. Aneurismal dilatations were, in many places, seen on the minute vessels (see Fig. 44). In places, therefore, the structure of the tumour corresponded to the condition which has been termed a telangiectatic glioma.

In the midst of some of the large masses of extravasated red blood corpuscles, which were situated in different parts of the tumour, enormous crystals were situated (see Fig. 45). These crystals were of a pale yellow colour; they were seen both in preparations mounted in Farrant's solution, and in sections which had been treated with absolute alcohol and oil of cloves, and mounted in balsam. I am unable to pronounce an opinion as to their exact nature, for I have never seen anything resembling them before. I feel convinced that they were not artificial (post-mortem) productions, the result of the reagents employed in hardening and mounting the sections. Possibly they were derivatives of the red blood globules in the midst of which they lay; but whether they existed during life, or were produced during the death agony, or even after death, I feel unable to decide.

Surrounding the masses of extravasated blood in which the crystals were embedded, and in the midst of some of the other extravasations in which there were no crystals, large irregularly shaped masses, composed of a highly refractive, transparent, and structureless material, were situated. These masses were for the most part of the same pale yellow colour as the large crystals, but some of them stained pink with picro-carmine. These irregular, structureless, colloid-like masses were probably like the crystals, derivatives of the extravasated red blood corpuscles. Further, I am disposed to think, after careful examination of many different preparations, that they represented a material in an intermediate stage between the extravasated red blood corpuscles and the hyaline material which was present in the walls of many of the

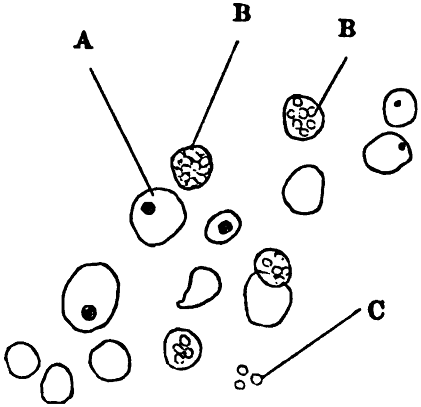

FIG. 43.—*Camera Lucida Drawing of a Microscopical Section of a portion of the Cerebral Tumour in the case of Miss A., showing large round Transparent Cells, some of which contain a single small Nucleus (? Nucleolus), others Red Blood Globules. These Cells lay in the midst of Extravasated Red Blood Corpuscles, which have been omitted from the Drawing. Stained with Picro-carmine, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam. (Magnified—Hartnack, oc. 3, obj. 8.)*

A, Large cell containing a single nucleus; B, B, cells containing red blood corpuscles; C, red blood globules.

bloodvessels of the tumour, and to which I will presently refer. The crystals, the irregularly shaped, transparent, yellow masses, and the hyaline material in the walls of the vessels, were present in such quantities that it is hardly possible, I think, to suppose that they were derivatives of the extravasated *white* blood corpuscles. Possibly, however, the hyaline material which was present in such abundance in the walls of the bloodvessels, both in this case and in Dr Leslie's case of glio-sarcomatous tumour (see page 591), may have been a derivative—a product so to speak—of the glial cells. But be that as it may, it is important to note that

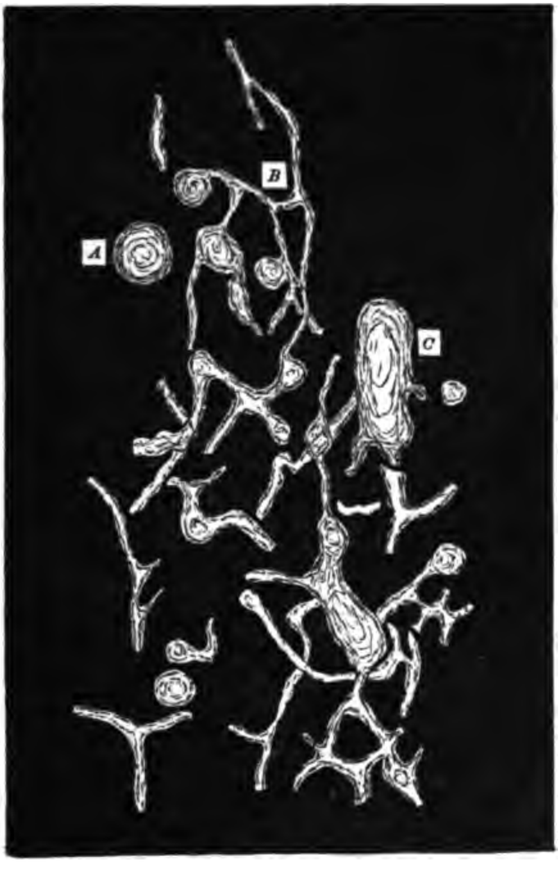

FIG. 44.—*Camera Lucida Drawing of a Microscopic Section of a portion of the Cerebral Tumour in the case of Miss A., showing Aneurismal Dilatation of the Minute Vessels. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam. (Magnified—Hartnack, oc. 3, obj.* 8, *and drawing reduced from* 8 *to* 4 *inches.)*

A, Transversely divided vessel; *B*, vessel with numerous aneurismal dilatations; *C*, large aneurismal dilatation. The tissue of the tumour in the midst of which the vessels lie, and many of the vessels themselves, have been omitted from the drawing.

in these two cases in which the hyaline degeneration of the vessels was so extensive, the structure of the two tumours was identically the same; both were glio-sarcomatous tumours; in both there was a large cyst connected with the tumour; in both the tumour tissue contained an enormous number of minute vessels; and in both there was evidence of extensive blood extravasations.

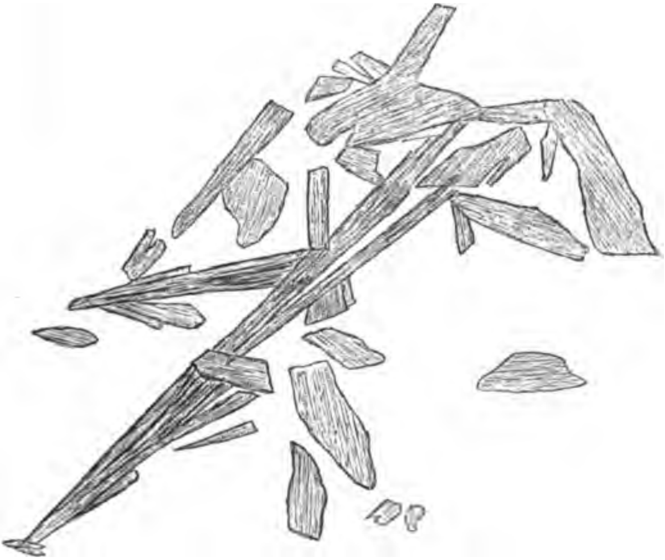

FIG. 45.—*Camera Lucida Drawing of a Microscopical Section of a portion of the Cerebral Tumour in the case of Miss A., showing the Large Crystals described in the Text. The Blood Corpuscles, in the midst of which the Crystals lie, are not shown in the drawing, and could hardly be individually distinguished with this Magnifying Power—Hartnack, oc. 8, obj. 3, and drawing reduced from 4 to 3½ inches. The Preparation was stained with Picro-carmine and mounted in Farrant's Solution.*

In many parts of the tumour highly refractive, homogenous masses, composed of hyaline material, were seen. These hyaline masses were in some places most numerous; many of them were small, others very large; the large masses were almost invariably stained pink when treated with picro-carmine. Some of the small masses did not take on the pink stain, but remained unstained, or were stained of a pale yellow or greenish-yellow colour; in fact, they closely resembled little drops or beads of yellowish-green glass. The large hyaline masses were much more highly stained in sections which were treated with alcohol and oil of cloves and mounted in balsam than in sections mounted in Farrant's solution.

In completely cleared-up carmine and picro-carmine preparations (*i.e.*, sections which had been treated with absolute alcohol), the large hyaline masses were concentrically lined; in sections half-cleared-up (*i.e.*, treated with methylated spirit), and still better in preparations mounted in Farrant's solution, one or more minute vessels, which were, as a rule, transversely divided, could be seen in the midst of the hyaline material. The concentric appearance seen in completely cleared-up preparations was evidently the result of the shrinking produced in the hyaline material by the absolute alcohol, for the concentric markings were less marked in half-cleared-up preparations, and not seen in sections mounted in Farrant's solution.

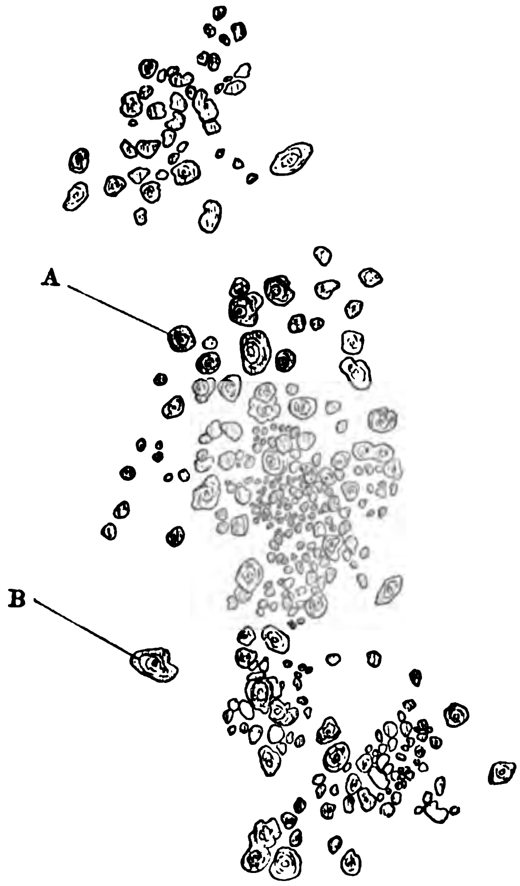

FIG. 46.—*Camera Lucida Drawing of a Microscopical Section through a portion of the Cerebral Tumour in the Case of Miss A., showing numerous Hyaline Lumps. The Tumour Tissue, in the midst of which the Hyaline Masses lie, has not been represented, for, under this magnifying power the Individual Cells of the Tumour could not be distinguished. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam. (Magnified—Hartnack, oc. 2, obj. 3, and drawing reduced from 6½ to 4½ inches.)*

A, B, point to two of the hyaloid lumps, which are seen to be concentrically lined, and are in reality hyaline masses surrounding bloodvessels.

The small hyaline masses were in some cases connected with vessels, but in many places this connexion was not apparent, and the little hyaline masses then appeared to be simply scattered here and there in the midst of the tissue of the tumour. The appearances just described are well seen in Figs. 46, 47, and 48. In 46 and 48 the tumour tissue is not represented, but in Fig. 47 the comparative size of the glial cells and hyaline lumps is seen.

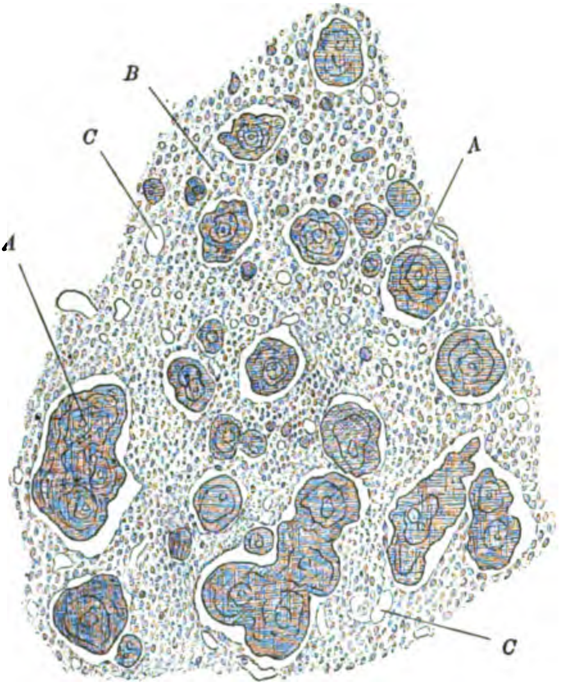

FIG. 47.—*Camera Lucida Drawing of a Microscopical Section of a portion of the Cerebral Tumour in the Case of Miss A., showing large Hyaline Masses lying in the midst of Sarcomatous Tissue. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam. (Magnified—Hartnack, oc. 3, obj. 7, and drawing reduced from 5½ to 3½ inches.)*

A, A, Large hyaline masses, concentrically lined, and containing minute bloodvessels; *B*, sarcomatous tissue; *C, C*, small vessels in the tumour, the walls of which are healthy.

In other sections long hyaline masses evidently surrounding minute vessels were seen (see Figs. 49 and 50). One of these hyaline masses was so cut that the minute vessel in its interior could be clearly seen; in this instance the hyaline mass seemed to form a sheath around the vessel; between the vessel and the hyaline cylinder some delicate spindle cells and connective tissue fibres were situated.

Adhering to the outer surface of these long hyaline sheaths were numerous small round or oval hyaline masses, which looked as if they had exuded in the form of drops from the main mass of hyaline substance. The same droplike appearance was also seen in transverse sections of vessels affected with the hyaline change (see Figs. 52 and 53).

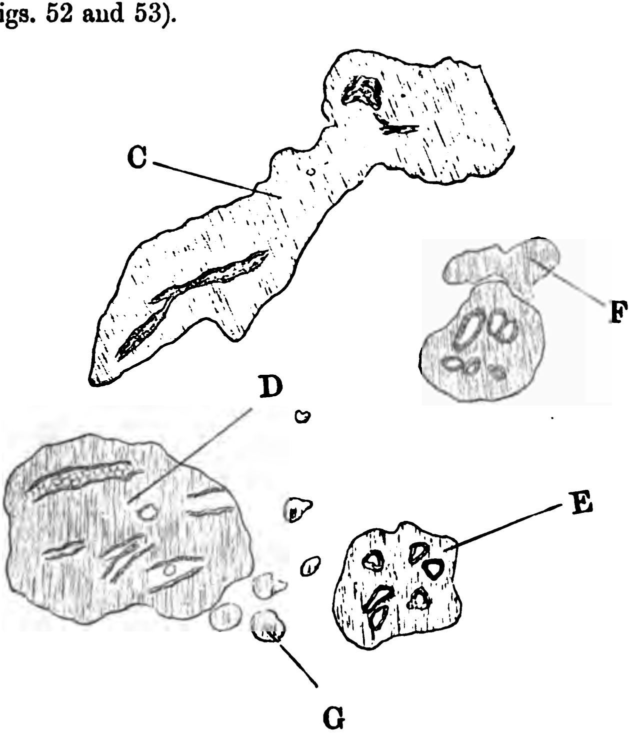

FIG. 48.—*Camera Lucida Drawing of Hyaline Masses from the Cerebral Tumour in the Case of Miss A., showing numerous small Vessels in their Interior. Stained with Picro-carmine, and mounted in Farrant's Solution.* (*Magnified—Hartnack, oc.* 3, *obj.* 8.)

C, D, Hyaline lumps, containing minute vessels longitudinally and transversely divided; E, hyaloid lump, containing six minute vessels transversely divided; F and G, large and small hyaline lumps, in which there are no vessels.

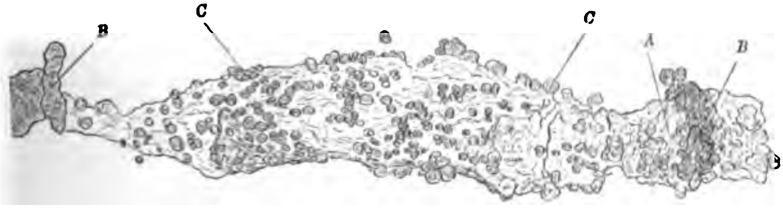

FIG. 49.—*Camera Lucida Drawing of a Bloodvessel from the Cerebral Tumour in the Case of Miss A, showing Enormous Thickening, due to Hyaline Infiltration of its Wall, and numerous small Hyaline Globules, which appear to have exuded from the Outer Surface of the Hyaline Sheath. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam.* (*Magnified—Hartnack, oc.* 3, *obj.* 8, *and drawing reduced from* 8 *to* 3 *inches.*)

A, Hyaline sheath; *B*, *B*, large, and *C*, *C*, small masses of hyaline material adhering to the outer surface of the hyaline sheath. The small hyaline masses are concentrically lined.

The walls of many of the large vessels contained in the tumour were also infiltrated with hyaline material (see Figs. 51, 52, and

53). In some instances (as in Fig. 51), the hyaline infiltration was limited to one side of the vascular wall, and in many cases the hyaline material in the vascular wall appeared to be continuous with masses of hyaline material in the tissue of the tumour surrounding the affected vessel.

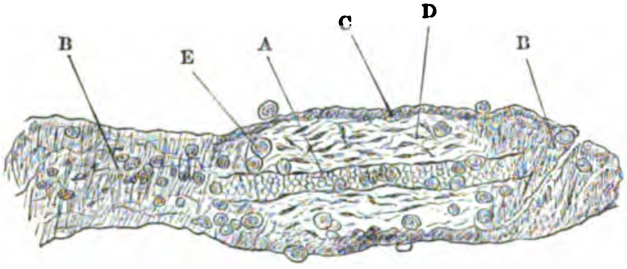

FIG. 50.—*Camera Lucida Drawing of a Minute Vessel and the Hyaline Sheath which surrounds it, from the Cerebral Tumour in the Case of Miss A. The Hyaline Sheath is so cut that the Minute Vessel in its Interior is distinctly seen. Between the Vessel and the Hyaline Sheath some delicate Spindle Cells and Fibres are situated. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam. (Magnified—Hartnack, oc. 3, obj. 8, and drawing reduced from 4½ to 3½ inches.)*

A, Vessel containing red blood corpuscles and some small round hyaline lumps; B, hyaline sheath surrounding the vessel; at B′ the hyaline sheath is cracked across; C, cut edge of hyaline sheath; D, spindle cells between the sheath and its contained vessel; E, hyaline globules which are adhering to, and in places appear to have exuded from, the hyaline sheath.

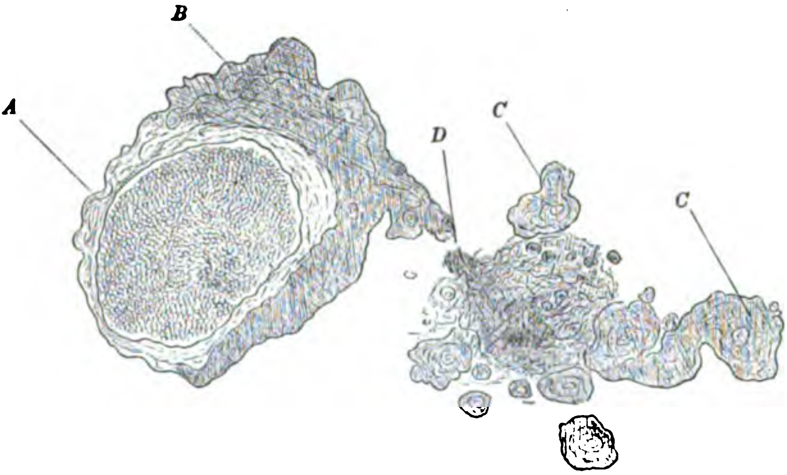

FIG. 51.—*Camera Lucida Drawing of a Section through a portion of the Cerebral Tumour in the Case of Miss A., showing a Bloodvessel, the Wall of which is partly infiltrated with Hyaline Material, which is apparently continuous with Hyaline Masses in the Tissue of the Tumour surrounding it. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam. (Magnified—Hartnack, oc. 3, obj. 8, and drawing reduced from 6 to 4 inches.)*

A, Healthy portion of vessel wall; *B*, Hyaline mass in vessel wall; *C*, *C*, hyaline lumps in surrounding tissue; *D*, the junction of the hyaline mass in wall of vessel and in surrounding tissue; the continuity has apparently been broken in the process of preparation. The sarcomatous tissue in which the vessel lies has been omitted from the drawing.

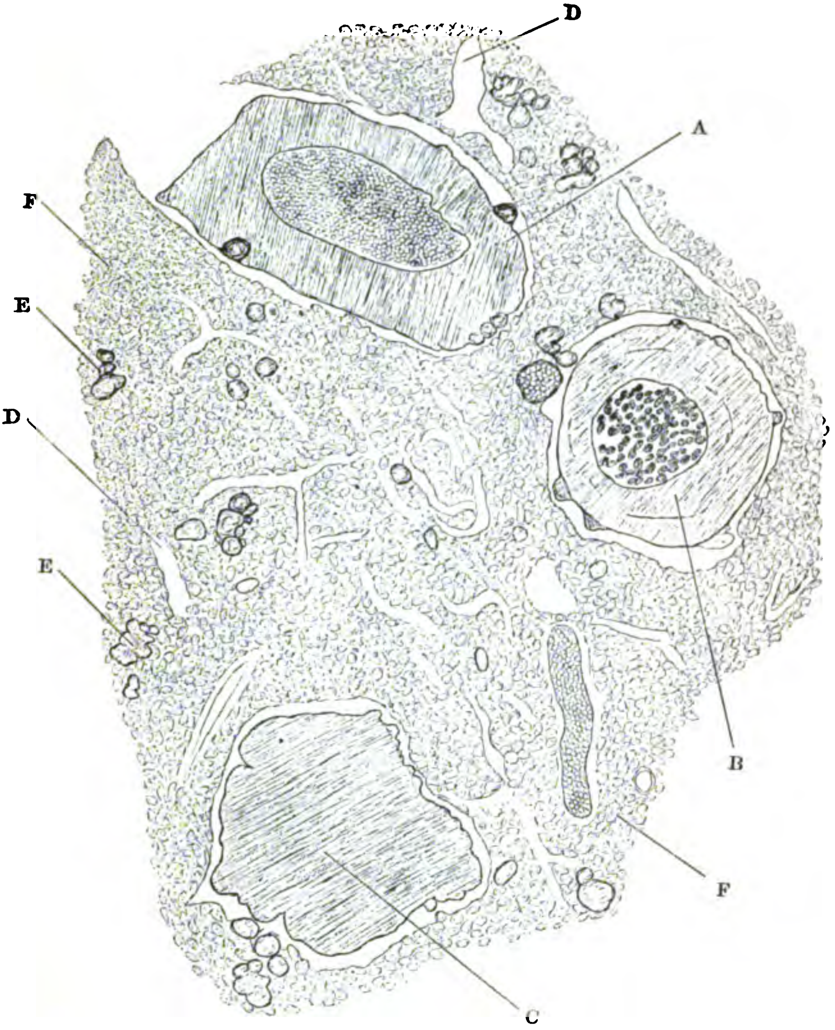

FIG. 52.—*Camera Lucida Drawing of a Microscopical Section of a portion of the Tumour in the Case of Miss A., showing three Vessels, the Walls of which are enormously thickened and infiltrated with Hyaline Material. Stained with Picro-carmine, mounted in Farrant's Solution. (Magnified—Hartnack, oc. 3, obj. 8, and drawing reduced from 7 to 4½ inches.)*

A, Vessel containing blood corpuscles—its walls are enormously thickened and infiltrated with hyaline material; B, vessel with walls affected in the same manner as A, but filled with sarcomatous cells, forming, as it were, a sarcomatous infarction; C, large mass of hyaline material, which seems to represent a former bloodvessel; D, D, small vessels in the midst of the sarcomatous tissue; E, E, small hyaline lumps in the midst of the sarcomatous tissue; F, F, point to the sarcomatous tissue, which is composed at this part of round and oval cells.

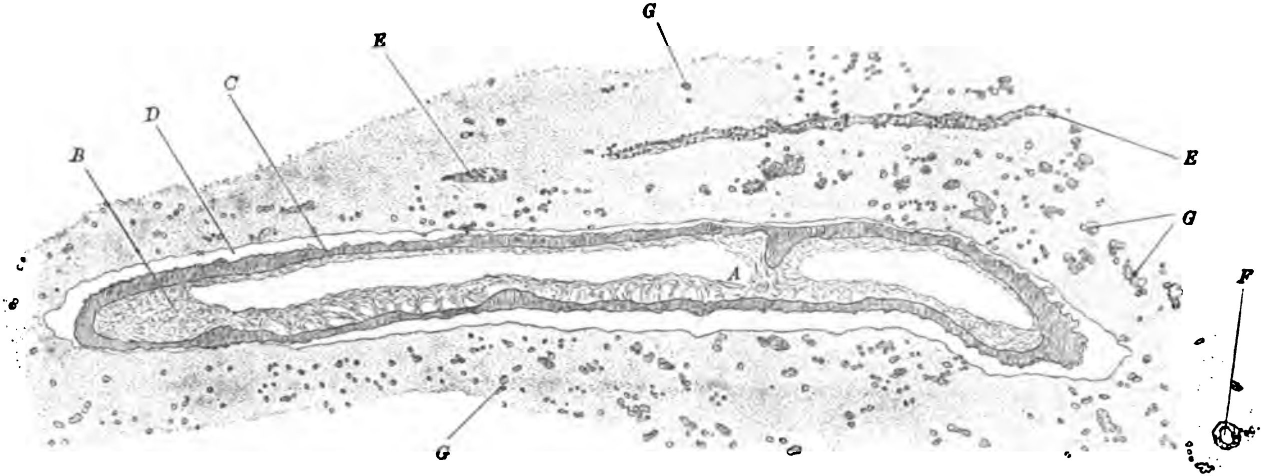

FIG. 53.—*Camera Lucida Drawing of a Microscopical Section through a portion of the Cerebral Tumour in the Case of Miss A., showing a large Vessel in Longitudinal Section; the Coats of the Vessel are infiltrated with Hyaline Material, and its Canal is partly obstructed by an organizing Thrombus; numerous small Hyaline Lumps are seen in the surrounding Tissue—some of them appear to be free, others adhering to Minute Vessels. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam.* (*Magnified—Hartnack, oc.* 3, *obj.* 3, *and drawing reduced from* 11 *to* 6¼ *inches.*)

The letter *A* is placed in the interior of the vessel, near a point where its canal is bridged across by a mass of hyaline material and by a portion of the organized thrombus (*B*); *C*, hyaline material in walls of vessel; *D*, space (? lymphatic space) surrounding the bloodvessel; *E*, *E*, minute vessel, seen longitudinally, surrounded by numerous small hyaline masses; *F*, small vessel, transversely divided, the coats of which are infiltrated with hyaline material; *G*, *G*, *G*, small hyaline lumps in the tissue of the tumour, the minute structure of which cannot be seen under this low magnifying power.

Some of the large vessels affected with the hyaline change were filled with blood corpuscles (see A, Fig. 52); in one instance (B, Fig. 52) the vessel contained glial cells—an infarction or throm-

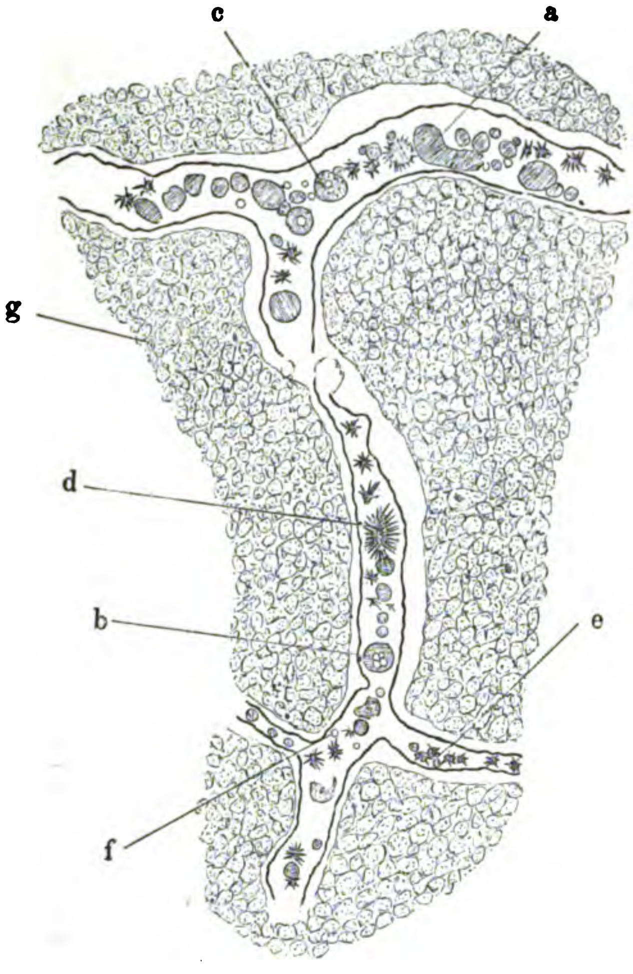

FIG. 54.—*Camera Lucida Drawing of a Section through the Cerebral Tumour in the Case of Miss A., showing a Bloodvessel surrounded by Sarcomatous Tissue; in the interior of the Vessel there are numerous masses of Hyaline Material, some of them contain small round Bodies (Vacuoles, or Red Blood Corpuscles), others are bristled with Acicular Crystals. Stained with Picro-carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam. (Magnified—Hartnack, oc. 3, obj. 8, and drawing reduced from 5½ to 5 inches.)*

a, Large irregularly shaped hyaline mass, b and c, round hyaline masses containing small, clear, round bodies (? vacuoles or red blood corpuscles); d, large oval hyaline mass, bristled with acicular crystals; e, small round hyaline masses, studded with acicular crystals; f, red blood corpuscle; g, sarcomatous tissue, composed of round and oval cells. There were numerous minute bloodvessels amongst the sarcomatous cells; they are not shown in the drawing.

bosis composed of cells identical in structure, though not quite so large in size, as the cells forming the adjacent portion of the tumour. In several instances, vessels, the walls of which were infiltrated with hyaline material, were partly filled up by an organizing thrombus (see Fig. 53).

In many different sections hyaline lumps, for the most part round or oval, and many times larger than red blood corpuscles, were seen in the interior of vessels, the walls of which were healthy. Some of these masses contained round, clear, colourless globules in their interior—probably vacuoles, but possibly red blood globules. The surface of the hyaline masses within the bloodvessels was in many instances bristled with fine acicular crystals; these crystals, which were stained in picro-carmine preparations of the same pink colour as the hyaline material, had probably been formed after death or during the death agony. In Fig. 54 a remarkable illustration of these intra-vascular, hyaline masses and crystals is faithfully represented; and it is to be observed that in the portion of the tumour surrounding this vessel no hyaline masses are to be seen.

Remarks.—This case presents several points of great clinical and pathological interest.

Diagnosis.—It could hardly, I think, be doubted, that the condition of the patient when I first saw her, and the whole previous history of the case, were indicative of an organic cerebral lesion; while the history of headache and vomiting, the pseudo-apoplectic attacks, the one-sided paralysis and tremor which varied so remarkably from time to time, and the temporary and unilateral optic neuritis observed by Dr Barlow, together with the absence of any of the ordinary causes of cerebral softening, were strongly suggestive of an intracranial tumour.

The reason which induced me, when I first saw the patient, to think that the tumour was pressing upon the pons Varolii have already been detailed. The appearances found at the autopsy showed no cause for the left-sided facial paralysis, nor of the extreme difficulty of swallowing which was such a marked symptom at the time of my first visit.

On reviewing the whole history and progress of the case, I am disposed to think that the character of the intellectual deterioration (the marked loss of the power of attention and of mental concentration), the falling of the head to the right, and the defects in speech (use of wrong words, etc.), which might be called a minor degree of aphasia, should have enabled us to localize the lesion in the left frontal lobe. It must, however, be remembered that many of the symptoms to which I have just referred were by no means prominently marked, that almost all of them were temporary and evanescent (present at times, absent at others), and that it seemed difficult to explain the unilateral paralysis and voluntary tremor, and to account for the remarkable variability of these symptoms (paralysis and tremor) by a tumour in the frontal lobe.[1]

Further, a careful review of the symptoms in the light of the conditions found at the post-mortem leads me to think that the exact pathological nature of the tumour might perhaps have been correctly surmised.

The coarse tremor, absent while the limbs were at rest, but present on voluntary movement (granting that it was due to organic and not to functional—hysterical—disease), was indicative either of cerebro-spinal sclerosis or of pressure on the motor conducting fibres.

The facts that the paralysis and tremor varied greatly in degree from time to time, and had on more than one occasion completely disappeared, excluded cerebro-spinal sclerosis (indeed that condition was never suspected, for the symptoms, taken as a whole, were in no way indicative of its presence), and ought, perhaps, to have suggested the presence of a cyst, or at all events of fluid pressure.[2]

Granting, then, as might perhaps have been conjectured, that the intermittent character of the paralysis and tremor could only have resulted from the pressure of fluid, the tension of which varied in degree from time to time, it might, I think, further have been supposed that the cause of the pressure was the presence of a cyst. The variations in the degree of pressure, as evidenced by the paralysis and tremor, were so rapid and extensive that an aneurism—another possible cause of intermittent pressure—might, I think, have been definitely excluded.

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[1] In the *British Medical Journal*, 3rd March 1876, and in the *Edinburgh Medical Journal*, December 1878, I have reported cases in which tumours with cysts were found in the frontal lobes. In both cases the mental symptoms were very prominent, and in both there were sudden but temporary attacks of hemiplegia without loss of consciousness, and without convulsions. In one case there was also some loss of power on the same side (arm and leg) as the lesion. These two cases have several points in common with the one which I am at present describing.

[2] The pressure of a cerebellar tumour on the pons or medulla is a common cause of this form of voluntary tremor. For the past ten years I have been familiar with cases of this kind, and have explained the tremor by the pressure of the tumour upon the motor conducting fibres in the pons Varolii or medulla. I have also seen two cases in which a lesion, presumably in the neighbourhood of the lenticular nucleus (for the diagnosis was not confirmed by post-mortem examination), has been attended with the same form of voluntary tremor, the result, I suppose, of pressure on the motor strands of the internal capsule. But in these cases there were marked sensory disturbances, the result no doubt of pressure on the sensory fibres of the internal capsule. I have met with no case in which a tumour of the frontal lobe by pressing upon the motor fibres of the internal capsule has caused tremor of this kind—unless such was the position of the lesion in a case which I saw some two years ago with Dr Struthers of Leith. In many respects that case bore such a close resemblance to the one (case of Miss A.) which I am now describing, that although there was no post-mortem, I will on some future occasion record its chief details.

Now, if we exclude parasitic cysts (hydatids and cysticercus cellulose), which, in such a case as this, might probably be excluded—*firstly*, because of their extreme rarity; and, *secondly*, because there was no evidence of similar disease in any other part of the body—a cyst of sufficient size to produce the symptoms which have been described must in all probability have been the result of an ordinary hæmorrhagic apoplexy or of a new growth (glioma with hæmorrhage and cyst formation).

Further, ordinary cerebral hæmorrhage (hæmorrhagic apoplexy *par excellence*) might, I think, have been definitely excluded as the cause of the supposed cyst—*firstly*, because there was no evidence of any of the conditions which are usually associated with ordinary cerebral hæmorrhage (cardiac, vascular, or kidney disease); *secondly*, because the symptoms, both individually (headache, vomiting, pseudo-apoplectic attacks) and as a whole, and the whole progress and course of the case, were strongly in favour of a tumour rather than of softening, the result of hæmorrhagic apoplexy. In particular, the numerous pseudo-apoplectic attacks are easily explained by repeated small hæmorrhages in the substance of a tumour, and the disturbance of the intracranial pressure produced thereby, but would have been difficult or impossible to explain on the supposition that the supposed cyst had resulted from ordinary hæmorrhagic apoplexy. It is hardly possible to imagine so many separate hæmorrhagic extravasations, all of small size, all recovered from within a few hours, all outside the ordinary lenticulo-striate region, for none of the hæmorrhages were followed by motor or sensory paralysis.

The fact that sudden attacks of hemiplegia, rapidly passing off, were observed in two other cases of cyst in the frontal lobes, has already been referred to.

Reviewing, then, the symptoms which were observed during life in the light of the appearances found at the post-mortem, and taking into account the other two cases of tumour with cyst in the frontal lobe which I have reported, I am disposed to think that the position and exact pathological nature of the lesion might perhaps have been correctly surmised.

The effect of free purgation on the pseudo-apoplectic attacks is another point of great clinical interest, and is, I think, satisfactorily explained by supposing that the drain of water from the bowel by reducing the general blood pressure, produced absorption of fluid, which had been effused into the tissues of the tumour, while it, perhaps, at the same time reduced the tension of the fluid in the cyst; and that in one or other or both of these ways the increased tension within the cranium was reduced, and relief afforded.

The condition of the deep reflexes is a point of considerable interest. At the time of my first visit there was marked paralysis of the right arm and leg, but the knee-jerk was diminished instead of increased, as it usually is in cases of cerebral hemiplegia. When I next saw the patient the hemiplegia had almost completely disappeared, and the knee-jerk had reappeared, and was, in fact, equal to that on the left (non-paralyzed) side.

This fact would seem to show that where paralysis results from *simple* pressure upon motor conducting fibres (*i.e.*, where there are no irritative changes in the conducting fibres as the result of that pressure) the knee-jerk is diminished rather than exaggerated—an important clinical indication of the cause of the paralysis, if it should be verified by future observations.

Further, if the effect of simple pressure is to produce diminution of the deep reflex movements, the exaggeration of the deep reflexes, which is present in ordinary hemiplegia, must evidently depend upon a process of irritation passing down the pyramidal tract to the multipolar nerve cells of the spinal cord, and not upon the simple arrest or shutting off of the cerebral control—the other theory which has been advanced to account for the exaggeration in that condition.

The character of the mental deterioration which was present in this case, and the *marked way in which the head tended to fall to the right side* (the side opposite the lesion), confirm Ferrier's observations on lesions of the frontal lobes.

The exact duration of the lesion must be a matter of speculation. It can hardly be imagined that the cerebral attack which was said to be due to "water on the head," whatever that term may mean, and which occurred at the age of twelve (thirty-five years before the patient's death), had anything to do with the condition.

Whether the well-marked cerebral attack (coma, rigidity, and speechlessness, lasting for five days) which occurred at the age of thirty-five was due to the lesion which was found at the autopsy it is impossible to say. It must, however, be observed that after this attack a distinct and permanent change was observed in the patient's mental condition; presumably, therefore, there had been some lesion which had resulted in permanent damage. It is not unreasonable to suppose that the cause of this attack was a hæmorrhage into the left frontal lobe, and that the cyst resulted from that hæmorrhage.

The condition of the optic nerve and retina.—The fact, that in this case, in which (*a*), the lesion was distinctly irritative in character (evidenced by its microscopical characters, by the adhesion of the dura mater over the tumour, and by the direct extension—auto-inoculation—of the new growth from the surface of one to that of the other frontal lobe), and in which (*b*) there was no evidence of increased intracranial pressure at the autopsy, there was only a passing neuritis in one fundus, supports, I think, the view which I have always held, that increased intracranial pressure is a most important factor in the production of the double optic neuritis which is so frequently observed in connexion with intracranial tumours. It must, however, be remembered that Dr Hughlings Jackson has advanced the fact that, in those rare cases in which the neuritis is unilateral, it is present, as it was in this case, on the opposite side to the cerebral lesion, as an argument against the increased intracranial pressure theory.

Points of pathological interest.—The extreme vascularity of the tumour, the evidence of many separate small hæmorrhages in the tissue of the tumour, the frequent relationship of cysts with gliomatous tumours, the direct extension of the tumour by a process of auto-inoculation from the surface of the left to that of the right frontal lobe, the glio-sarcomatous infarction which was present in one of the vessels of the tumour (see Fig. 51), and the peculiar character of the large crystalline masses (see Fig. 45) which were found in some of the hæmorrhages, are points of pathological interest, which the limits of this communication do not allow me further to consider. I must, however, briefly refer to the hyaline degeneration which was such a remarkable feature both in this tumour and in Dr Leslie's case reported on page 591.

Hyaline degeneration is met with in a great variety of different conditions. Recklinghausen, as the result of a long series of observations, concludes that the hyaline metamorphosis plays a considerable part in a great variety of different conditions, both normal and abnormal. It consists of a transformation (or infiltration) of the tissues, more especially the walls of the minute arteries, into a translucent, highly refractive material, which bears a close resemblance to the translucent material which is met with in cases of amyloid or waxy degeneration. It differs, however, in this important particular from the amyloid material, that it does not give the characteristic reactions with iodine and methy-violet.

Hyaline degeneration of the minute arteries has been observed in diphtheria, typhoid, scarlet fever, and other febrile affections; it is comparatively common in lymphatic glands; is frequently seen in the brain, more especially in the neighbourhood of caseous or hæmorrhagic foci. P. Meyer has shown that it plays an important part in the production of the minute aneurisms which are seen on the terminal branches of the pulmonary artery in cases of phthisis. The same observer has shown that true obliterative thrombi composed of hyaline material may frequently be observed in infarctions of the spleen and kidney in cases of phthisis. In a case of chronic meningitis with caseous deposits in the pia mater, P. Meyer found at certain points, where the cerebral substance was in a state of hæmorrhagic softening, an infiltration of the walls of the vessels, and often a complete obliteration of their canals by the hyaline substance. He has also seen the afferent arterioles in the kidneys of scarlet fever completely obliterated by hyaline masses; and he records a very remarkable case, in which cerebral symptoms with high temperature developed in the course of an attack of acute rheumatism, and in which a most extensive hæmorrhagic softening of the greater part of the left occipital lobe was found after death, the cerebral lesion being apparently due to the plugging of the minute arteries with refractive hyaline masses.

The exact chemical composition of the hyaline material is unknown.

In some cases the hyaline deposits are, according to Recklinghausen, only products of the death agony, but in others, and amongst these there can be no doubt that the two cases of cerebral tumour to which I am now more especially referring must be included, the hyaline material had evidently been formed during life, and is of distinct pathological importance.

Various opinions have been expressed as to the source of this hyaline material. Almost all observers who have studied the subject seem to think that it is not simple fibrine. According to Recklinghausen, it is a derivative of cellular protoplasm. Most writers seem to think that the white corpuscles of the blood are the source from which it is usually derived, but P. Meyer and others admit that the endothelial cells of the bloodvessels, and in some cases, perhaps, all the elements of the tissues, may be transformed or fused, as it were, into hyaline material. Pitres believes that the hyaline material may be derived from the red blood corpuscles. P. Meyer does not think the evidence on this point conclusive; but I am disposed to think, for the reasons previously stated (see pages 692 and 693), that in the case related above (case of Miss A.) the large crystals, the irregular, transparent masses, and the hyaline material were probably derivatives of the red rather than the white blood-cells.

Hyaline degeneration is seen where the conditions for satisfactory nutrition are interfered with; anything, whether a chemical or mechanical cause, or a dyscrasia, which interferes with the vitality of cell life, seems to predispose to its production. It is especially liable to occur in the neighbourhood of caseous foci, and in the cerebral arteries in cases of hæmorrhagic extravasation and red softening. Further, the two cases which we are now reporting show that an advanced degree of hyaline degeneration may be met with in cases of glio-sarcomatous tumours of the brain, and suggest the possibility of the hyaline change being a product, not merely of the extravasated blood corpuscles, but possibly of the glial cells themselves.[1]

I regret that a microscopical examination of the blood was not made during life; and that the great viscera of the thorax and abdomen was not examined at the autopsy.

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[1] For further information as regards hyaline degeneration the reader is referred to Dr P. Meyer's paper, "De la formation et du role de l'hyaline dans les anevrisms et dans les vaisseaux" (*Archives de Physiologie normale et pathologique*, 1880, page 598 *et seq.*), to which I am indebted for many of the foregoing particulars.

IV.—THE SHOULDER-JOINT IN RELATION TO CERTAIN DISLOCATIONS AND FRACTURES.

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(*Read before the Medico-Chirurgical Society of Edinburgh, 3rd November* 1886.)

IN our surgical text-books and monographs attention is given to the alteration in shape which the articulation of the shoulder-joint undergoes in old cases of dislocation. Such changes have usually been ascribed to absorption caused by disturbed pressure relations consequent on the new position of the bony surfaces. concerned. Alterations and irregularities seen in the glenoid fossa of the scapula have been figured and described as occurring after such injuries, but the similar conditions of the head of the humerus are not so frequently referred to.

In his well-known paper (*Trans. Path. Soc., London,* vol. xii., 1861) Mr Flower recognises Malgaigne's two forms of dislocation forward, but states that numerous intermediate degrees are to be found, and he summarizes as follows:—"The changes which take place in the contiguous extremities of the two bones in the ordinary forms of dislocation when left long unreduced, can be well studied in these specimens, and deserve more attention than has hitherto been paid to them, as they have frequently been mistaken for evidences of the existence of partial or pathological luxations. A new shallow socket is found upon the anterior surface of the neck of the scapula partly by absorption of old and partly by deposit of new bone around its edge. The exact position of this socket varies according to the degree of displacement of the humerus. In the first variety (subcoracoid of Malgaigne) the new cavity is formed more or less at the expense of the anterior portion of the glenoid fossa, which is gradually worn away, so that in some cases the original socket is almost altogether lost. A corresponding change takes place in the head of the humerus. Where it rests upon the edge of the glenoid fossa absorption occurs, so that a groove is excavated usually between the articular head and the great tuberosity. With continued friction this groove goes on increasing in size simultaneously with the changes in the scapula, the two accommodate themselves to each other, and ultimately the head of the latter bone presents a double articular surface, separated by a vertical ridge; the posterior part being part of the old glenoid cavity, the anterior the newly-formed socket. These respectively articulate with the sides of a wide groove placed vertically on the head of the humerus, and a rude kind of joint, allowing of a certain amount of motion, is the result. At the same time, it will be observed that by the absorption that has taken place in both bones the head of the humerus has made considerable progress towards regaining the position it occupied before the injury, and therefore the external signs of dislocation become to some extent removed. The under surface of the coracoid process, especially near its tip, is almost always found smooth and eburnated, having entered into the formation of the new articulation. If the head of the humerus is placed further under the coracoid process (intra-coracoid of Malgaigne), the new socket is formed upon the neck of scapula quite outside the glenoid fossa, upon which it does not encroach (Pl. II., fig. 4). It is then a simple cup-shaped depression, and the head of the humerus undergoes none of the changes above described, but is generally worn away on the side of the greater tuberosity by friction against the anterior edge of the glenoid fossa, and hence assumes a somewhat oval shape. In these cases the coracoid is not usually a part of the new articulation. All intermediate varieties are found between the two extremes. The position of the new socket, quite free from, or more or less encroaching upon the glenoid fossa, the head of the humerus unaltered, flattened on its outer side, or grooved, being circumstances which all depend upon the exact situation in which the bone has found its new lodgment. The osseous surfaces, which were in contact, are in long-standing cases generally divested of cartilage, and in places hard and polished." There is no mention here of any initial injury sustained by the bones, and the glenoid fossa receives the chief attention.

Mr Flower presents us with a series of outline diagrams (Plate II.) of the glenoid and head of the humerus in section, to show the relative position of each when normal or with chronic rheumatic arthritis, or in the recent and old-standing dislocations. Going over his paper as far as the condition of the preparations admitted of exact description, we may easily recognise Malgaigne's dual types; the subcoracoid, distinguished broadly as follows: head of humerus grooved lying under and touching the coracoid process, glenoid encroached upon by the new socket. Intra-coracoid head of humerus unchanged, lying below and rather internal to the coracoid, which it only touches at the root, if at all. Glenoid unaltered, new socket distinct. Clinically the position of the head of the humerus is important, as also the increased tilting of the arm from the side said to be seen in the former injury. It may be observed, again, that in Mr Flower's paper the changes are ascribed to absorption from changed pressure relations. So also in Holmes' *System of Surgery*, third edition. That this is true as regards the intermediate types there can be little doubt. The element of time must also be considered. But the chief factor is the condition of the displaced head and its relations.

If we look at the outline diagrams (Pl. II.), we are tempted to ask how it is that in a recent subcoracoid dislocation the displaced humerus is able to remain balanced on the anterior lip of the glenoid fossa, even allowing that the slight depression at the anatomical neck does become engaged there. And further, if we seek an actual specimen illustrative of such a condition amongst the thirty-three preparations brought forward by Mr Flower, we find but one recent example, which, however, does not help us. In fact, such a state of affairs would almost indicate a partial dislocation, and could hardly be maintained for any length of time. In Ashhurst's *Encyclopædia* we read, "It is said that, in spite of all assertions to the contrary, that a true partial dislocation forwards occurs in consequence of the bone slipping forwards to the coracoid process, and the biceps tendon gliding back behind the head of the humerus, and by its tension holding it forward against the coracoid, although the anatomy of the part is such that the head could never rest in this position except for the support of the displaced tendon behind."

An examination of recent cases of subcoracoid dislocation casts much light on the whole subject. We are thus enabled to understand the grooving of the head of the humerus, the causation of fractures above the level of its surgical neck, and also how injury to the glenoid and neck of the scapula may arise. Recent examples are not readily obtained. There are two in the collection of the University of Edinburgh, unfortunately without history or notes, which Professor Sir William Turner has kindly given for examination (Pls. I. and II.)

No. 168 is a dissected preparation in spirit of a recent subcoracoid dislocation of the shoulder, with indented fracture of the head of the humerus, produced by impact against the anterior lip of the glenoid fossa. The glenoid is rather bruised, the ligament along the anterior lip, especially at its lower part, is lacerated and pushed backwards. The capsule has apparently been ruptured at its lower and anterior part, and is pushed upwards. There is also evidence of rupture at the attachment to the lower portion of the glenoid fossa. The head of the humerus is rotated outwards, and is carried upwards, inwards, and forwards, so that the coracoid impinges against its upper surface. It shows a deep recent fracture indentation, which stretches from one point of the anatomical neck to another, mapping out a small segment of the cartilaginous head of the humerus on its posterior internal aspect. Into this groove, which measures about 1½ inch in length, ½ inch in breadth, and ¼ inch in depth, the anterior lip of the glenoid accurately fits. The posterior and lower part of the great tuberosity occupies the lower part of the glenoid fossa. The inner border of the lesser tuberosity is in line with the tip of the coracoid produced onwards. The bicipital groove, owing to the rotation, looks outwards and backwards. The tendon of the biceps was intact. The other muscles have been cleared away (see Plate I.)

167. Dried specimen of unreduced subcoracoid dislocation of

the shoulder, with indented fracture of the head of the humerus, from impaction against the anterior lip of the glenoid fossa. This consists of the entire scapula, upper third of humerus, and outer third of clavicle. A small portion of the inner lip of the glenoid has been chipped off and bruised. The glenoid cartilage is pushed backwards. The capsule is represented by its anterior and superior parts attached to the scapula and humerus. A few bony nodules about the size of lentils are to be found adhering to the capsule at the base of the great tuberosity. The head of the humerus presents a large indentation, which evidently corresponds to the anterior edge of the glenoid. It is about one inch long, half an inch in depth, and is crescentic in form, with its concavity towards the root of the great tuberosity. When laid in position we note that the head of the humerus is thrown forwards, inwards, and downwards, and is also so rotated outwards that the bicipital groove corresponds to the axis of the coracoid process produced onwards (Plate II.)

There is a cast in the museum of this case prior to dissection (Plate III.)

The next case is extracted from the *Catalogue of St Bartholomew's Hospital Museum*, vol. i. p. 146.

No. 1019.—Dissection of a recently dissected shoulder-joint, which was reduced during life. The deltoid is cut across and reflected; the lower part of the muscle was bruised, and separated from the bone to a slight extent. The subscapularis is cut across about an inch from its insertion; its under surface at this point was slightly bruised. Neither this muscle nor the supraspinatus or infraspinatus was lacerated. The capsule of the joint was untorn; a small extent of its anterior attachment with the periosteum, with which it was continuous, was detached from the margin of the glenoid cavity and adjacent bone, *but the joint was not opened.* The capsule has been cut across at its anterior attachment. There is a deep vertical indentation or groove at the posterior margin of the articular surface of the head of the humerus, into which the anterior margin of the glenoid cavity accurately fits. It appears to have been produced by the violent impact of the head against the prominent rim on which it probably lodged.

From a man, æt. 36, who was knocked down by a train whilst at work on the line. On admittance he was found to have a subcoracoid dislocation of the right shoulder, in addition to numerous other injuries, from which he died about twelve hours after the accident. The head of the right humerus could be distinctly felt beneath the coracoid process. The axis of the bone was directed considerably outwards and backwards. Reduction was effected extremely easily, on slight traction being made in the usual manner. See paper by Mr Eve, *Med. Chir. Trans.*, vol. lxiii., 1886, p. 317.

We are in this way led to believe that the distortion dates from the moment of the receipt of injury. It would seem that the initial grooving takes place in the head of the humerus, which is indented by impact with the sharp anterior edge of the glenoid. The humerus becomes rotated outwards, and its head thrown forwards, so that the anatomical neck lands upon the anterior lip of the glenoid, which in its turn cuts deeply into the head of the humerus, as the patient falls with great force or receives a severe blow on his shoulder. This may occur with or without laceration of the capsule, the head of the bone passing directly forwards. Or, again, the head may clear the edge of the glenoid, or, rather, undergoing momentary displacement into the axilla, may then rise and occupy the intracoracoid position. Or, yet again, the impact between glenoid and humerus may be so great that one or other suffers fracture with or without the capsule giving way. An atrophied condition of the posterior portion of the head of the humerus is sometimes met with. This also might predispose to fracture or dislocation without rupture of the capsule, the head being more readily driven over the glenoid margin.

We can produce, although with some difficulty, and in a very artificial manner, a similar injury on the cadaver. Make a subcoracoid dislocation, lay the subject prone, and strike the scapula violently. It will be found that a series of lesions may be obtained, varying in degree from a mere bruise of the glenoid cartilage onwards to indentation of the head of the humerus or to complete intracapsular fracture, the anterior lip of the glenoid, hard and dense, cutting into the cancellated tissue of the humerus like a knife.

In evidence of this being the correct view, we may refer to some papers and observations which seem to have escaped the notice of general writers on surgery, and whose accuracy may thus be corroborated.

Malgaigne himself asks (*Traité des Fractures*, p. 497) if the grooves in the humerus are not frequently produced just at the moment of dislocation by the crushing of the head of the humerus against the border of the glenoid. He looked on such cases rather as examples of incomplete luxation.

Mr Joseph Bell, in his paper on the "Nomenclature of Scapulo-Humeral Dislocations" (*Ed. Med. Journal*, May 1863), quotes a case in which "the diagnosis was made of dislocation forwards, complicated with a longitudinal fracture separating the greater tuberosity from the head and the lesser tuberosity. It was one of those cases where, in addition to the primary dislocation, there is a consecutive fissure of the head of the humerus. How is this fissure produced? Not by any peculiarity in the direct violence which caused the injury, not by any conceivable action of the muscles, but by the sharp edge of the glenoid border being forced as a wedge against the posterior groove of the humerus. This is I hold to be the only rational manner in which we can explain such a complicated lesion. The position of the groove" (he alludes to the posterior sulcus of the anatomical neck) "of the humerus on the groove in dislocation explains in a most satisfactory manner the causation of those not uncommon but hitherto rather inexplicable injuries, I mean fractures of the anatomical neck of the humerus."

At the Cambridge meeting of the British Medical Association in 1880 (*Brit. Med. Jour.*, 1880, p. 349), Professor Bennet, of Dublin, brought forward five examples of dislocation at the shoulder complicated by fracture of the upper extremity of the humerus. One was recent, and the fracture incomplete, the others were united. From a study of these and other recorded cases, Professor Bennet states,—1. Fracture of the upper extremity of the humerus occurring as a complication of the dislocation commences at that part of the anatomical neck which rests, after dislocation has taken place, against the upper border of the glenoid cavity. 2. It is caused by pressure of the humerus against the sharp edge of the glenoid cavity, probably the result of a constrained position, preventing the separation of the elbow from the side as in ordinary dislocations. 3. While the fracture starts at the anatomical neck, and may follow it strictly, it commonly passes into the shaft detaching the lesser tuberosity with the head. 4. The fracture is neither comminuted nor impacted.

We have already made reference to Mr Eve's case, and now add a few sentences from his most suggestive paper. In the description he points out that the joint had not been opened into, although the capsule was stripped from off the anterior border of the glenoid cavity, remaining, however, continuous with the periosteum. He says,—"I have been unable to find on record a single case of traumatic dislocation of the humerus in which the joint was not opened. . . . . The indentation or groove on the posterior surface of the head of the humerus is another unusual feature in the case. The formation of the groove partially accounts for the slight damage to the capsule, as the head of the bone, having lodged on the margin of the glenoid cavity, was thus prevented from passing further inwards on the surface of the scapula. The groove was situated at the extreme margin of the articular surface, showing that the head was entirely separated from the glenoid cavity. The case cannot, therefore, be regarded as an instance of incomplete dislocation. . . . . The occurrence of such a groove as that observed in the case is of considerable interest, since it may explain the mode of production of fracture of the anatomical neck, with dislocation of the head of the humerus forwards. Further, the mode of production of the hitherto unaccountable cases of impacted fracture of the anatomical neck may perhaps, *in some instances*, be explained in a similar manner."

It would appear, therefore, that we are justified in recognising the true type of subcoracoid dislocation as being *always* associated with an indentation fracture of the head of the humerus caused by the dense, hard, anterior lip of the glenoid. The capsule may be ruptured or not. If there be complete fracture, the capsule may remain intact, retaining the upper fragment, or the capsule may give way, and the displaced fragment remain outside.

The subcoracoid dislocation lends itself specially to Koch's manipulative procedure for dislocations. Old standing cases are, however, not to be regarded with favour, for even should we get the head freed from adhesions, there is no longer any glenoid to receive it, atrophy taking place rapidly. With the *intra-coracoid*, however, we have greater hope of success, since here the glenoid remains comparatively unaltered for long.

From the fact that our museums contain many examples of dislocation forwards, we are apt to imagine that the downward displacement is much rarer. One must remember, however, that this may mean no more than a relative difficulty in reduction. Of nine *recent* cases admitted lately to the Royal Infirmary, only one was subcoracoid, eight were clearly subglenoid.

A careful description of the cause of the injury, the condition of the muscles and joints on the normal and abnormal sides, the appearance of the shoulder as regards outline and projection, the amount of tilting and rotation, the precise position of the head of the humerus and its relation to the coracoid process, the presence of crepitus, and the history as regards rheumatic arthritis before and after injury, are all points worthy of careful investigation and record. We should not only be able to make an exact diagnosis, but at once to appreciate the form of manipulative treatment best adapted for each case.

Recent examples of fractures of the head of the humerus, as described from old-standing cases by W. M. Smith; fractures of the glenoid; longitudinal splits in the line of the biceps tendon, as diagnosed by Ogston and others, are still desiderata.

DESCRIPTION OF PLATES.

PLATE I.—Recent subcoracoid dislocation of the shoulder-joint, with indented fracture of the head of the humerus. No. 168, Museum, Univ., Edin.

PLATE II.—Subcoracoid dislocation, with indented fracture of the head of the humerus. No. 167, Mus., Univ., Edin. For appearance prior to dissection see Plate III.

Outline Diagrams from Mr Flower's Paper:—

Fig. 1.—Normal conditions of head of humerus and glenoid of scapula.

Fig. 2.—A, glenoid as altered by chronic rheumatic arthritis.

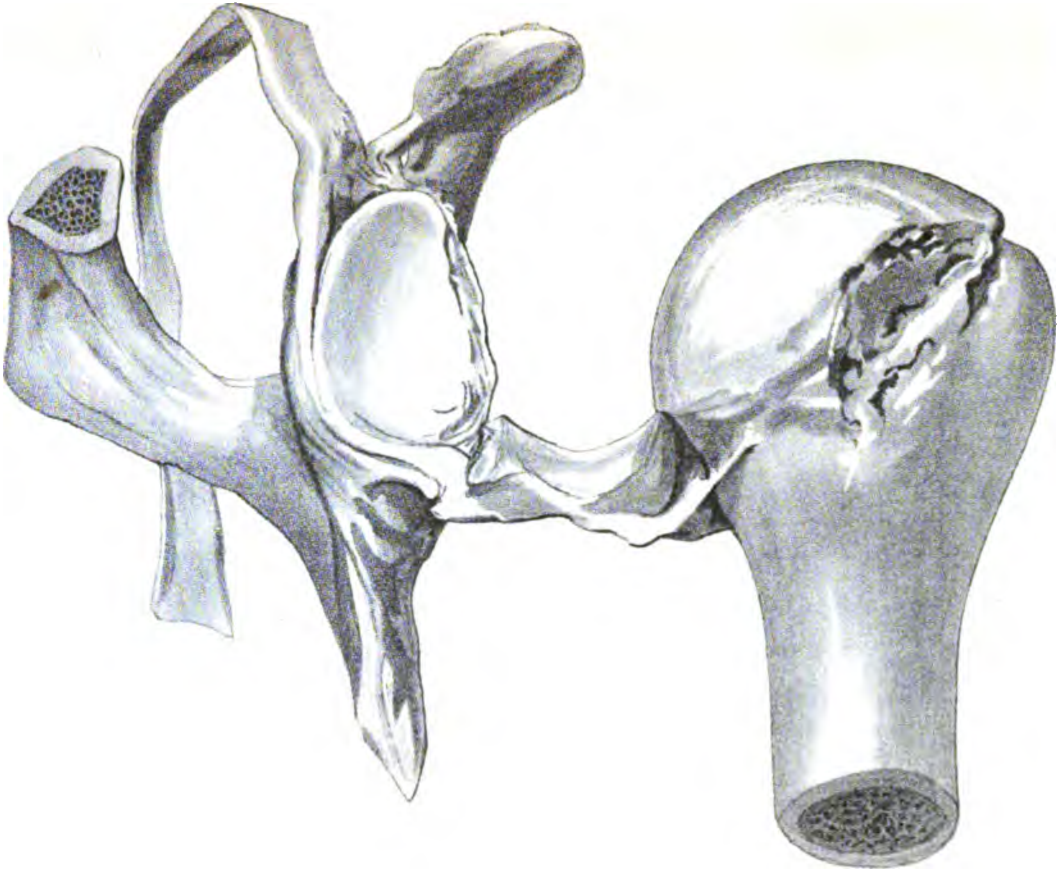
Fig. 3.—Position of the head in recent subcoracoid dislocations. B, The same when left long unreduced.

Fig. 4.—Position of the head and formation of new socket in intracoracoid dislocation.

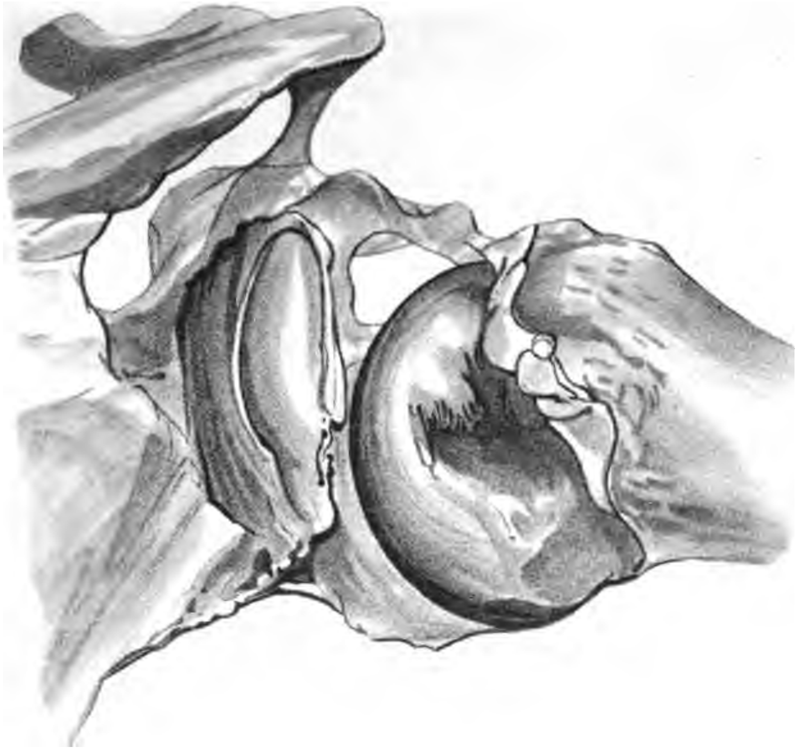
PLATE III.—Figs. 1, 2, 3.—Anterior and lateral aspects of shoulder, as seen in case (No. 167, Plate II.), of subcoracoid dislocation prior to dissection.

Fig. 4.—Relation of glenoid and head of humerus, as seen in section, after artificial production of subcoracoid dislocation, with indented fracture of head of humerus.

PL. I.



PL. II.



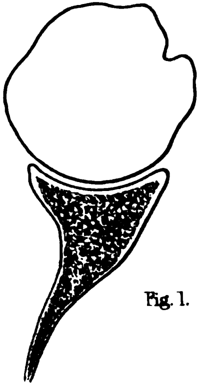


Fig. 1.

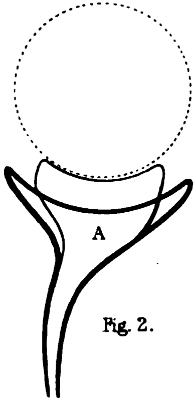


Fig. 2.

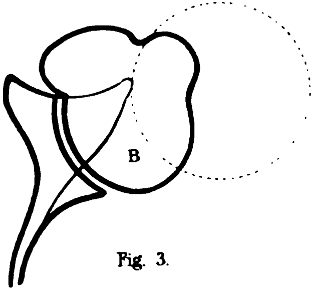


Fig. 3.

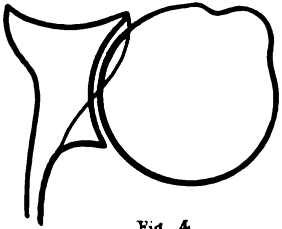


Fig. 4.

PLATE III.

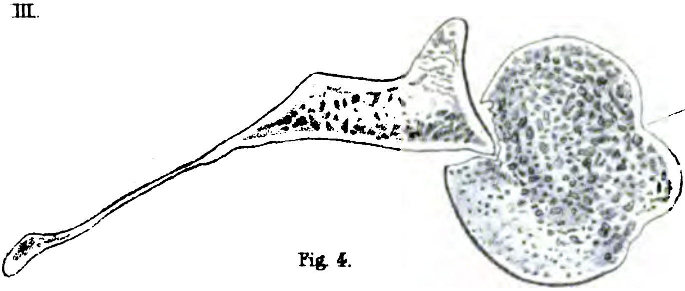


Fig. 4.

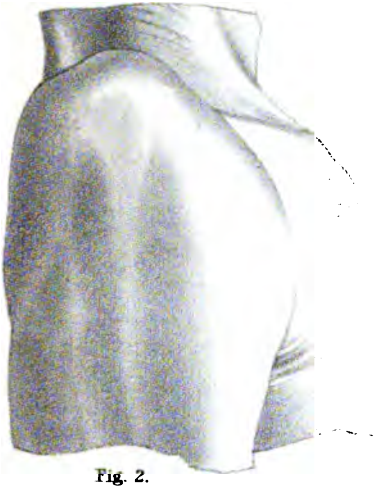


Fig. 2.

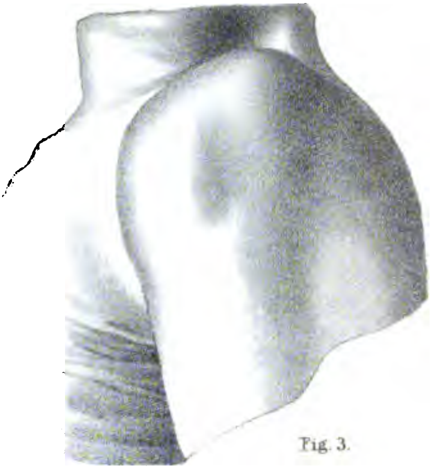


Fig. 3.

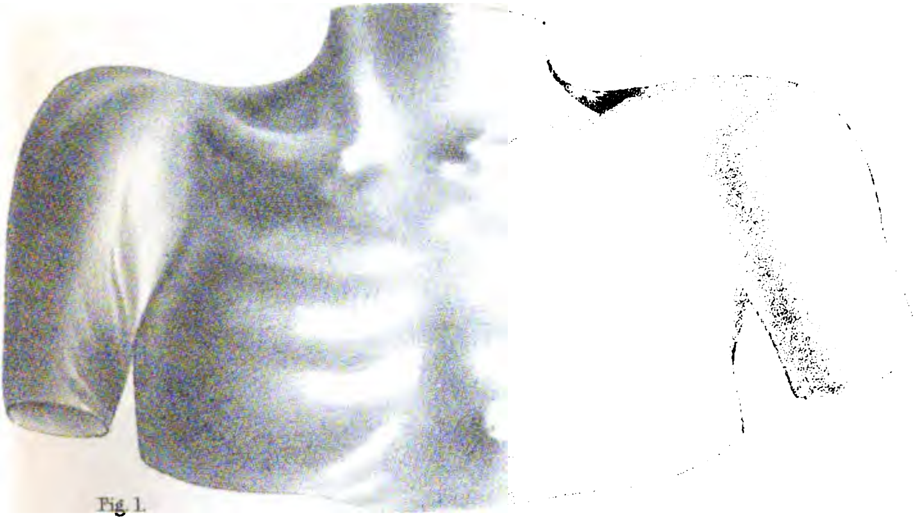


Fig. 1.

W & A K Johnston

V.—A CASE OF INFLAMMATION OF THE DEEP CELLULAR TISSUE OF THE NECK.

By ANDREW LYALL, M.D., L.R.C.P. & S. Edin.

WITHOUT going into the causes and pathology of cellulitis of the neck, I wish to draw attention to a very typical case which occurred in my practice some months ago. No disease, I believe, requires more prompt action, and, perhaps, in none is the relief more immediate.

D. K., aged 22, a tall and strong man, states he had been feeling out of sorts for some time—was languid, disinclined for his work, and went off his food. On the 29th May complained of headache, with a pain down the back and slight uneasiness in swallowing. Thinking it a sore throat, he applied fomentations to his neck, and took a dose of salts. Feeling rather worse the following day, I was sent for; and, on my visit in the afternoon, found the patient feverish, temperature 100°·8, tongue furred, slight congestion at the back of the throat, some difficulty in swallowing, and a hot, tense swelling at the angle of the left jaw. Not anticipating any serious mischief, I ordered local applications and a sedative internally. The following day, May 31st, the patient was restless, with severe headache, pain, and difficulty in opening the mouth or swallowing. The left side of the neck was swollen, and presented a typical appearance; the swelling extended more than half way down the left side of the neck, was dark or dusky red, shining, hot and tense to the feel. No enlarged lymphatic glands could be felt. The temperature, 102°·4.

June 1st.—Local symptoms more marked; general symptoms rather more aggravated; temperature, 103°·2. That evening there was a distinct rigor. Next morning there was a second and much more severe rigor, and about 9 A.M. I got a message to hasten to the patient as the friends thought he was dying. I found the poor fellow in great distress—suffering severely from dyspnœa, his face quite livid, heart's action very feeble, and extremities cold. Stimulants and warmth improved matters somewhat, but the patient being in a very critical condition indeed, I got the permission of the friends to telegraph for Dr Joseph Bell, Edinburgh, who, on his arrival some hours after, saw the nature of the case at once, and, without anæsthetizing the patient, made an incision where there seemed most bulging and a curious crackling sensation. This was about two inches below the jaw, in the line of the sternomastoid. Dr Bell employed Hilton's method, using his left forefinger, however, as a director to cut through the cervical fascia. A considerable quantity of fœtid *gas* and a small quantity of sanious *pus* escaped; free drainage was used, and the wound dressed. Soon after the patient felt greatly relieved, took nourishment, and slept fairly well that night. The following day I found the temperature still up and the patient restless, so I thoroughly injected the wound, reintroduced the drainage, and dressed with antiseptic precautions.

June 3rd.—The patient had had a restless night; temperature, 103°·6, and finding a tendency for the disease to spread in an upward direction, I made a second opening, just below and in front of the angle of the jaw, when a greater quantity of fœtid pus and gas escaped; the wound freely drained and dressed as before. In a few days a large slough came away from each of the openings, and after this the patient made a rapid recovery.

In concluding these notes, I may state that from the first local sedatives were employed, and the treatment was tonic and stimulant.

VI.—REPORT OF CASES OF DISEASES OF THE EAR UNDER THE CARE OF DR KIRK DUNCANSON.

Drawn up by DR BERTIE MACKAY.

THE total number of ear cases treated at the Eye, Ear, and Throat Hospital from July 1882 (when the cases were last classified) to December 1886, a period of four years and a half, was 3275, giving an average of over 727 new cases per annum.

Chronic suppurative inflammation of the middle ear was, of course, the most frequent disease, the cases of this disease and its consequences numbering 1054, *i.e.*, over 32 per cent. of the total recorded cases.

Chronic catarrh of the middle ear was noted in 911 cases, constituting 27·8 per cent. of the whole; and of the cases of this disease over 5 per cent. were *ascertained* to be of a syphilitic nature.

Cases of wax or epithelial plugs in the external auditory meatus amounted to 731, but in the majority of these cases the condition is to be regarded as merely symptomatic of a graver condition of the ear.

Under the heading of morbid growths of the auricle are recorded—cystic, papillomatous, and cheloid tumours; and in the external auditory meatus (in which are not included polypi the result of chronic suppurative inflammation of the middle ear), instances of molluscous (pearly tumour), fibrous, papillomatous, and mucous growths, and one instance of what was apparently a cartilaginous outgrowth, but the nature of which was not absolutely determined, as the patient did not return after a drawing of the growth had been made.

Below is appended a complete summary, in tabular form, of all the ear affections recorded in the books of the Hospital for the period stated above.

I. Affections of Auricle.	1. Wounds,		4
	2. Hæmatoma,		1
	3. Malformations,		9
	4. Morbid growths,		8
	5. Frost-bite,		2
	6. Pruritus,		2
	7. Inflammatory affections.	*a.* Eczema,	73
		b. Intertrigo,	12
		c. Syphilis,	2
		d. Lupus,	1
		e. Erysipelas,	1
		f. Simple inflammation,	4
		g. Abscess,	3
		h. Inflammation of sebaceous glands,	3
II. Affections of the External Auditory Meatus.	1. Wax and epithelial plugs,		731
	2. Foreign bodies,		32
	3. Inflammatory affections.	*a.* Eczema,	64
		b. Syphilis,	2
		c. Furuncular,	47
		d. Diffuse — Acute,	42
		d. Diffuse — Chronic,	15
	4. Morbid growths,		7
	5. Hyperostosis,		8
	6. Exostosis,		2
	7. Cicatricial stenosis,		6
	8. Pruritus,		5
III. Affections of the Membrana Tympani.	1. Injuries,		8
	2. Inflammations (Primary).	Acute,	7
		Chronic,	3
	3. Mycosis,		1
IV. Affections of the Middle Ear.	1. Suppurative,	Acute,	54
		Chronic, (and *all* its consequences.)	1054
	2. Non-suppurative,	Acute and sub-acute catarrhs of Eust. tubes and tympanum,	282
		Chronic,	911
V. Affections of the Internal Ear and Auditory Nerve.	1. Deaf-mutism,		20
	2. Syphilis,		8
	3. Tinnitus,		11
	4. Vertigo,		2
	5. Tubercle (?),		1
VI. Otalgia,			22
	Syphilitic Periostitis of the Mastoid,		2

VII.—INTERNAL DERANGEMENTS OF THE KNEE-JOINT.

By W. SCOTT LANG, M.D., F.R.C.S.E.

(*Continued from page* 523.)

IN most of the works already quoted it will be found stated that internal derangement of the knee-joint "occurs when the foot is everted," but this is quite incorrect. It ought to be, *that luxation or subluxation of the* INTERNAL *semilunar cartilage may occur when the leg is* ROTATED OUTWARDS. When luxations of the *external* fibro-cartilage come under consideration, it will be found that they occur only when the leg is *rotated inwards.* The proof of these statements is very strong, in fact complete, and it hence becomes of the greatest importance to distinguish between derangements of the internal and those of the external cartilage when considering either their causation, treatment, or prevention. The erroneous statement above quoted has, doubtless, arisen (1) because derangements of the internal cartilage are by far the most common, and (2) by using the expression "everted" instead of rotated outwards. Of course, before *any* rotation can occur the knee must be somewhat flexed. The rotation here referred to is a rotation of the tibia upon a prolongation of its own axis, and must be carefully distinguished from the rotation upon an oblique axis which takes place when the joint is "screwed home."

Rotation *outwards* is performed chiefly by the biceps muscle, consequently, when this movement is taking, or has taken place, the superior surface of the tibia will be found to be held closely apposed to the *external* condyle of the femur, and the external semilunar cartilage is thus held firmly in its place between the two bones. But the gap between the *internal* condyle and the head of the tibia will be found to be increased, and the internal semilunar cartilage is movable, and, consequently, is apt to slip too far in between the internal condyle and the corresponding portion of the head of the tibia. The opposite state of affairs results when the tibia is rotated *inwards*,[1] for then the *internal* semilunar cartilage is held firmly between its respective condyle and the head of the tibia, the parts holding it being the muscles used to rotate inwards, viz.—the semitendinosus, gracilis, and sartorius, and also the *anterior* crucial ligament, which is then tense, whilst the gap between the external femoral condyle and the head of the tibia is increased in extent.

When the knee is flexed the anterior part of the semilunar cartilage glides backwards on the head of the tibia; if the leg be then rotated *outwards*, the internal semilunar cartilage will be drawn in between the internal condyle and the head of the tibia. A sudden movement of extension will then cause the internal condyle of the femur to roll on to too much of the cartilage; the alar pad will then fail to fit into its place, and complete extension will be impossible. Mr Knott, in *Dublin Medical Journal*, 1882, states that there is then spasmodic action of the quadriceps extensor femoris, but whether this be the case or not, the rotation outwards of the tibia, "inseparable from complete extension" (Goodsir), then comes into play. In this movement the inner tuberosity of the tibia must make a sweeping motion *forwards and outwards*. Thus the semilunar cartilage will be held by the femoral condyle, and as the bone makes its curve forwards and outwards, the coronary ligament will be stretched, or, it may be, torn, and this is doubtless what occurs in aggravated cases, or in cases where the luxation has recurred frequently, and it is well known that this, as well as all the other forms of internal derangement of the knee-joint, is very apt to recur after it has once taken place.

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[1] This must be distinguished from the rotation outwards, "inseparable from complete extension of the limb." The latter is effected by the quadriceps extensor, chiefly through the "quadricipital expansion" of fascia, connected chiefly with fibres of the vastus externus.—See Goodsir, *op. cit.;* also Williams, *Journal of Anatomy and Physiology*, vol. xiv. p. 181.

In the milder forms there may be only a stretching and relaxed condition of the coronary and transverse ligaments, and a failure of the alar pad to fit into its place, and hence inability to completely extend the limb; but there is always the risk that sudden extension of the joint, with the parts in faulty position, may result in destruction of the coronary ligament. Prolonged flexion of the knee-joint, as in kneeling, strains the anterior part of the coronary ligaments, and hence the disorder may also be produced in this manner.

In the *Lancet* of 16th September 1851, Mr Smith records the case of a girl who suffered this luxation from a dancing-master roughly turning her toes outwards. After many attempts to produce this luxation on the cadaver, the writer has hardly met with any success, probably owing to the lax condition of parts; but it is on record that Bonnet succeeded in producing it on the dead body. But apart from evidence of this nature, the clinical evidence confirms completely the importance of the anatomical points to which attention has here been called, and which any one can verify in his own person, by examining the gaps between the tuberosities of the tibia and the femoral condyles when the leg is rotated respectively inwards and outwards.

It is unnecessary to multiply clinical cases, for the writer knows that, in his own person, the luxation can be produced *only* when the toe is turned outwards; and on 11th December 1885, a student, who is subject to this form of internal derangement, and whose case is still under observation, informed us that he found much benefit from the simple advice to keep the toe turned inwards. "The joint was much firmer, felt safer, and not so liable to go out." On the other hand, Mr L., now a general practitioner, writes in answer to the question, "Do you feel it safer or stronger when the toe is pointed inwards or outwards?" "Far safer and stronger when the toe is pointed *outwards*. When the toe is pointed inwards, I always feel as if the accident was going to happen." But this latter is a case of subluxation of the EXTERNAL cartilage, and will be afterwards cited in detail.

The chief clinical features of this variety of internal derangement are thus accounted for. The slight projection at the antero-internal part of the joint is the alar pad pushed forward along with part of the infrapatellar pad. The undue projection of the semilunar cartilage over the inner tuberosity of the tibia results from its failing to assume its proper oval shape, which is requisite in complete extension of the joint. Its anterior part has fallen backwards on the head of the tibia, and its inner part consequently projects inwards. The inability to completely extend the limb is amply accounted for by a consideration of the anatomy and mechanism of the parts concerned in complete extension.

Treatment.—After this accident occurs, there is generally some synovitis and effusion into the joint. This is doubtless Nature's method of attempting to cure, viz., by distending the joint, and so allowing the displaced parts a chance of falling into their places, and at the same time enforcing rest. The value of the treatment recommended by the writers quoted is considerably lessened from the fact that they did not distinguish between luxations of the internal and those of the external cartilage, and the importance of making this distinction has already been conclusively shown.

Most of the authors recommend that the knee be flexed, and then suddenly and forcibly extended. Should this fail, the knee has to be shaken about in all directions in a haphazard manner, and sometimes the cartilage will then resume its normal position. Vincent, however (*Observations on Surgical Practice*, p. 75), deprecates the use of force; and it will be remembered that he referred only to luxations of internal cartilage, and therefore his evidence bears on the point now under consideration. Seeing, however, that the exact pathology of the condition was not made out, little attempt could be made to explain the rationale of any of the various methods of treatment, some of which had occasionally proved successful.

In order to reduce this special form of internal derangement, force ought not to be necessary; for, as the luxation may be caused by a very slight amount of violence, it ought to be reducible without the application of any great force. With the symptoms formerly detailed, the treatment ought to be—to flex the knee fully, keep it flexed for a little time, then rotate the leg firmly *inwards*, and extend somewhat suddenly while maintaining rotation inwards, at the same time pressing the rim of the cartilage inwards with the thumb should it protrude (as it generally does) over the inner tuberosity of the tibia.

Flexion removes the anterior portion of the head of the tibia from the femur, and so releases any portion of the cartilage which may have been jammed between the two bones. "In extreme extension it is the anterior portion of the tibia which is in contact with the femur, in the semiflexed position its middle, and in complete flexion its *posterior* edge" (Humphrey on *The Skeleton*). Flexion will also straighten out the alar pads should they be displaced or doubled upon themselves.

Rotation of the leg inwards is most important, as it brings the inner condyle of the femur more closely in apposition with its corresponding articular surface of the tibia, as already explained. Then, by extending the knee while maintaining rotation inwards, the internal condyle is kept moving truly in its socket, and does not ride upon too much of the semilunar cartilage.

Hey states, in a general manner, that the disorder may arise from "anything which prevents a condyle of the femur from moving truly in the socket formed for it by the semilunar cartilage." And although that is nearly all he says regarding the pathology, it accords, as far as it goes, with the theory here propounded. The rotation inwards makes tense the external (anterior) crucial ligament; and Goodsir states, *op. cit.*, that this ligament "guides rotation of the tibia outwards" in order to bring about complete extension. Hence by keeping this ligament tense, the rotatory movement necessary in order to completely extend the joint may be brought about. This same point is referred to by Morris (*Anatomy of the Joints*, p. 371), where he says, "'Pronation' is limited by external crucial ligament." Further references to treatment in general will be made after other forms of internal derangement have been described.

The External Semilunar Fibro-Cartilage.—The anatomical and physiological peculiarities of this body have already been referred to, viz., its smaller size and more nearly circular form, also its greater range of movement; and, keeping these facts in view as well as "the ordinary use of the joint," we can readily understand how its complete luxation is possible, and also why its partial or incomplete luxation is more rare than that of the internal cartilage. Luxation of this cartilage may be complete or incomplete.

Complete Luxation.—Several cases of this variety of internal derangement of the knee-joint are on record, and a drawing of a dissected specimen shown by Mr Godlee, *Transactions of the Pathological Society of London*, vol. xxxi., may be seen. In the words of Mr Godlee, "The circumference of the fibro-cartilage has been torn away from its attachment to the capsule of the joint, and it—the external semilunar cartilage—now occupies a vertical position in the intercondyloid fossa." This case appears to be quite unique, and nothing short of opening the joint would have sufficed to completely diagnose or treat the condition. There is no clinical history of the case; but it is conceivable that, by opening the joint and completely flexing the knee, it might have been possible to replace the cartilage between its proper bony surfaces and to fasten it there. This case might be designated one of complete and *persistent* luxation of the external fibro-cartilage; but several other cases are on record where such luxation was apparently complete although not persistent. The cartilage slipped from its place only when the knee was flexed, returning into its place when the joint was extended. Of such nature was the case reported by Mr Clement Lucas (*British Medical Journal*, 15th November 1879). It is described in the following words:—"On flexing the knee the leg and foot jerked inwards with a sudden shock, and, at the same time, a projection appeared on the outer side of the patella, which could be seen and felt. On extension the leg and foot jerked suddenly outwards, and the semilunar cartilage went back into its place."

Other cases corresponding exactly with this are referred to by Mr J. F. Knott in the *Dublin Medical Journal*, 1882. One is that of M. Le Fort, the eminent French surgeon, whose symptoms were exactly similar to those detailed above, and in whose case the lesion subsequently appeared on almost every occasion when the knee was forcibly *flexed*. The case recorded by Mr Clement Lucas was cured by rest and retention in a plaster of Paris case, so that it could not have been a pedunculated tumour attached to the synovial membrane. These pedunculated tumours, although rare, give rise to symptoms closely resembling luxations or subluxations of the semilunar cartilages, but are only mentioned here incidentally.

The movements so carefully detailed by Mr Clement Lucas deserve attention, as they seem to be explained by the mechanism involved in completing flexion. As already indicated, in order to attain complete *extension* of the knee-joint, a rotation of the leg and foot outwards takes place, the surfaces chiefly implicated being the spine of the tibia, alar pads, etc., and the peculiar oblique surface on the anterior portion of the internal condyle of the femur, as already fully detailed. Similarly, in completing *flexion* a rotatory movement in the *opposite direction* takes place,—the leg and foot rotate *inwards*, and the portion of the femur chiefly implicated is an oblique portion at the posterior extremity of the external condyle (Goodsir). Here, then, this luxation takes place; for in flexion the rotatory movement of Goodsir will carry the external tuberosity of the tibia forwards and inwards in a curve, carrying with it the external semilunar cartilage; and this cartilage is the more readily able to escape from under the external condyle of the femur, because the coronary ligament, which assists in maintaining the cartilage in position, is broken and weakened by the passage through it of the tendon of the popliteus muscle. This break in the coronary ligament exists at the point where its fibres are put into requisition, viz., the postero-external part.

(*To be continued.*)

Part Second.

REVIEWS.

Diseases of Tropical Climates. Lectures delivered at the Army Medical School. By WILLIAM CAMPBELL MACLEAN, M.D., C.B., Surgeon-General, late of H.M. Indian Army, formerly Member of Senate of the Madras University, Superintendent of Hyderabad Medical School, and Professor of Military and Clinical Medicine in the Army Medical School, Netley. London: Macmillan & Co., and New York: 1886. Crown 8vo, pp. 337. Appendix II.

THIS book will no doubt be eagerly read by the survivors of the 1476 medical officers for the British Army, the Royal Navy, and the Medical Service of the Government of India, who have passed through the Army Medical School of Netley since its opening in 1860; and it will also be welcomed by the profession at large, especially by those members of it who are going out to the Colonies, or to occupy civil medical appointments within the tropics. It is much to be regretted that these latter have no such opportunities as Netley affords for studying the problems which they will be called upon to solve in the tropics, and which are at present untaught in almost all the medical schools of the United Kingdom. In his introductory lecture, Dr Maclean remarks, "Some would-be advisers of young army medical men try to persuade them that when they leave the civil schools they are fully equipped for all that is before them in military life. Gentlemen, believe me, this is a mistake. . . ." The same remark may be applied to all young men leaving our medical schools to practise in the tropics. Much has to be learnt, and a little unlearnt, before a young graduate is fitted to take up the burden of tropical practice. This book to some extent supplies the necessary instruction, in medicine at least; for although the subjects treated of are not exhaustive, yet a great deal of most useful information will be found in the lectures.

The introductory chapter shows the wonderful work which sanitary reform has wrought in India. Not long ago the death-rate of the European army in India was about 69 per 1000; in 1882 it was only 12·07 in Bengal, 10·37 in Bombay, and 10 per 1000 in Madras,—giving a death-rate for all India of only 13·07 per 1000 from all causes. We do not, of course, mean to say that sanitary science alone has caused this great reduction; for the science of medicine has advanced greatly of late years, and the more moderate use of calomel and bleeding have done undoubted good. Perhaps the use of the lancet has been too much decried, for undoubtedly in the tropics, if not at home, its judicious use may often save a life.

As an example of the progress made in treating disease, we may note what the author says of dysentery. He knew of one regiment in the pre-sanitary age, with an average strength of 1098 men, have 2497 admissions and 104 deaths in one year from dysentery. This he contrasts with a force of 13,000 men in 1883, in which there were 500 cases of dysentery and only 2 deaths.

As might be expected, a book written by such an authority as Professor Maclean bristles with sound, practical information; and, at the same time, the scientific aspects of the subjects handled is not forgotten. We only wish that the book were rather longer, so that the treatment of the various diseases might have been dealt with in rather more detail. No space is lost on useless discussion; the author weighs the evidence for and against particular theories with judicious skill. He lets us see distinctly what his own opinion is, and where his mind is still open to conviction he distinctly says so. This is well seen in the way he handles the germ theory with regard to malaria and cholera. His summary of what is known as to the etiology of cholera is very concise and valuable. When dealing with such subjects as malaria, yellow fever, and cholera, upon which such an immense literature exists, it is by no means easy to sift the wheat from the chaff, but this Professor Maclean has done; and he has manipulated his facts with great skill and conciseness. To show the practical character of the book, one or two sentences may be quoted:—"Chalk and other mixtures should never be made up with sugar and mucilage in the hot and rainy season, or they should be made up for the day only. In less than twenty-four hours the mixture runs into fermentation, and is hurtful in diarrhœa. Mixtures containing chalk should be sweetened only when taken." "I am no advocate for pushing quinine by the use of doses to the extent of half a drachm or a drachm, which not only induces deafness, but even temporary blindness. This, to my mind, is to abuse and to bring into disrepute an invaluable agent." "I advise that such men (young soldiers when brought first under the influence of malaria) should be kept on a special list, and that within a lunar month from the period of cure, they should be required to present themselves to have their systems fortified against another attack, by being kept for some days under the influence either of quinine or arsenic." He also gives a very necessary warning as to caution in the use of "Livingstone's Rousers" in men debilitated by disease or climate, delicate women, or Asiatics, often both calling for careful treatment. Professor Maclean also recommends, for the first time, we think, the use of massage in intermittent fever. The effects of this he says, "if steadily and skilfully done by an expert, is to diminish congestion of the abdominal organs, and to distribute the blood more equally through the system (a powerful aid to its depuration); to regulate the action of the bowels, without the aid of aperient medicine; to remove the oppressive feeling of languor and lassitude; to promote cheerfulness, and healthy action of the skin."

Many men on first going to the tropics are apt to find a difficulty in diagnosing between enteric fever, pure and simple, and malarial remittent. Also between yellow fever and yellow malarial fever. Two tables are given in this book which are very useful, and should prevent young medical officers from making a wrong diagnosis.

Professor Maclean again calls attention to the value of Warburg's tincture in remittent fever, and, in order to prevent being charged with employing secret remedies, he publishes the formula for the remedy. We can fully bear out his statements as to its extreme value. It must, however, be used with caution in very adynamic cases, on account of the free diaphoresis it causes. The patients must have liberal support during its action.

In his farewell address Professor Maclean mentions a matter of no little importance. On account of a lecture given in the early days of his professorship on an epidemic of yellow fever which broke out in an important station attended with a lamentable mortality, "the Secretary of State for War was pleased to direct that in future all lectures delivered here should be submitted to him before publication . . . . it operated as a check on me, for I am so constituted that I cannot publish under a censorship, however mild, judicious, or even generous." It is a great pity we think that such censorship should in any way withhold from the profession the clinical experience gained in the Netley Hospital.

We are sure that the perusal of this book will well repay those who are interested in the subjects of which it treats.

A Manual of the Diseases of India, with a Compendium of Diseases generally. By W. J. MOORE, C.I.E., Surgeon-General with the Government of Bombay; Honorary Surgeon to the Viceroy of India, etc., etc. Second edition. London: J. & A. Churchill: 1886. Pp. 633.

IN the preface of this work the author states that nearly the whole of this manual has been rewritten. It is adapted to the trunk, the cabin, the tent, and the march, and does not profess to supersede important monographs on particular diseases or the chapters treating on tropical maladies to be found in some recent books on medicine. 572 pages of the manual are devoted to the diseases of India, a compendium of diseases generally occupying the last 61 pages.

This book supplies a distinct want, and we shall be much surprised if it is not as much appreciated as was the first edition. No medical man going to India should fail to find a corner for this useful volume, for he will find in it sound common sense and many valuable hints. Dr Moore has had a great deal of experience in the treatment of disease, and he knows well how to convey the result of his experience to the uninitiated. We are not sure that we can accept all the author's statements without challenge, but, still, his advice on the treatment of disease is always valuable. For instance, he denies the specific power of quinine, and considers that it should be regarded rather as an adjunct to the treatment than as the principal means of cure, and especially so in remittent or prolonged febrile conditions. And yet, he gives admirable advice for the administration of the drug, and was even the first to introduce the hypodermic method of giving quinine in 1862. He believes that when cinchonised patients recover they do so independently of, and perhaps in spite of, the supposed remedy. Yet he does not hesitate to use quinine when complications are present. "Even in head complications I do not hesitate giving smaller quantities for the sake of the tonic stimulating effect, but I avoid the sedative results, which are, in fact, synonymous with congestion."

The author's chapter on Malaria is interesting, but, he says, he casts off the thraldom in which we have so long been held by malaria. It is certainly true that up to the present time, notwithstanding all the investigations which have taken place, we must admit that we do not completely understand the origin of the disease. Dr Moore believes malaria to be the sum of the operations of the various conditions of climate and place by which we are surrounded, but he does not define what those various conditions of climate and place are.

He objects to the terms typho-malarial, malarial-typhoid, etc., but is of opinion that there is a mixed form of fever in India, which, whether it is regarded as a hybrid or a specific form, requires an authoritative place in the nomenclature, in order to avoid the actual impossibility of diagnosis of many and increasing instances under either one or the other of existing heads, which now leads to confusion, and which has led to the erratic use of many terms. *Undefined climatic fever* is the name he proposes for this disease, which he thinks should be given to a considerable portion, if not to the great majority of the fevers of India, whether a fever occurs epidemically or sporadically. The disease, he says, may sometimes most resemble remittent, at other times typhoid, typhus, or relapsing, yet not be found fairly distinguishable as either, according to the dicta enunciated by exponents of fever-types, but yet the blurred image of all. Any complication or sequelæ which occur during or after any other phase of fever may present undefined climatic fever, but pneumonia is the most common complication. He sums up the treatment of all fevers in sixteen very readable pages, full of valuable hints gained from practical experience.

Dr Moore does not credit Bengal with being the birthplace and home of cholera; on the contrary, he asserts the *de novo* origin of the disease under favouring circumstances in any country. To quote his own words, his idea of cholera is as follows:—"There is an unknown atmospheric condition, occurring more frequently in Eastern than in Western countries, which, meeting with certain but unknown conditions of matter, presenting most usually in unsanitary localities, generates an invisible, impalpable, imponderable, chemically and microscopically unrecognisable germ or poison, which may be conveyed in all directions by human beings, by cholera excreta, by clothing, by some varieties of merchandise, by water, by food, by insects, especially flies, or through the atmosphere, to an undiscoverable extent; probably in a more certain manner, in a more virulent form, and to a greater distance if favourable atmospheric influences exist." The author does not always write such long sentences. We believe with him that truth is great and will prevail.

La Lemonea Cloridrica nell' ultima pandemia di colera di Marsiglia. Esame delle statistiche dei Dottori Romeo e Virgilio pel dottor Cav. Stefano, con agguintavi una appendice di altre statistiche ed un esame critico di quelle pubblicate dul Prof. Cantani.

On Lemonea chlorohydrica in the late epidemic of cholera in Marseilles, examination of the statistics of Drs Romeo and Virgilio by Cavaliere Dr Stefano, with addition of an appendix of other statistics, and a critical review of those published by Professor Cantani. From his extensive experience in 1854 and in 1866-67 the author declares himself convinced of the great utility of chlorohydrica lemonea in cholera, and his opinion is confirmed by the results obtained by Dr Romeo in Marseilles, who between 11th July and 24th August treated 334 cholera patients with the lemonea, of whom only 31 succumbed to the malady. To Dr Romeo's statistics the author appends those of Dr Virgilio in Pizzone at Volturno, who with over 71 cases had 49 recoveries and 7 deaths among those treated in the same manner. With this method of treatment the author, from his own cases and those of the two gentlemen above mentioned, deduces the following inferences:—1. Lemonea chlorohydrica renders abortive the premonitory and choleraic diarrhœa. 2. The lemonea arrests immediately the vomiting, cramps, and diarrhœa in cholerina. 3. These effects being attained, all danger disappears and good hygienic measures complete the cure. 4. In cholera asphyxia if the lemonea be imbibed from the beginning of the attack the malady is reduced to the proportions of a cholerina. 5. If the patient be found in the algide stage, and this not long developed, the small intestine not having as yet sustained serious alterations, the lemonea suppresses the vomiting, the diarrhœa, and aqueous discharge; from this moment watery absorption commences, and the malady disappears. In such cases besides the bath, hypodermic injections might be most beneficial. 6. The lemonea requires to be promptly prescribed. In his subjoined appendix the author examines the hypodermic injection of Cantani, who out of 226 cases had 155 recoveries and 71 deaths. From these statistics 49 cases are to be subtracted as not having reached to algidism, and hence did not need hypodermoclism, leaving 177 thus treated—106 cured, and 71 deaths. Hence Dr Stefano concludes the proportion of favourable results obtained by Professor Cantani is very nearly equivalent to that declared in the *Statistica generale dell' ultima epidemia*, which ran thus:—Attacks, 14,233; deaths, 6371—being a mortality of 44·762 per cent. The author is not favourable to enteroclism. We have endeavoured to follow out the leading lines of the author's labours, which clearly display the profound conviction he entertains of the efficacy of "la lemonea cloridrica."

The Function of the Recurrent Laryngeal Nerve. From Experimental Studies in the Biological Laboratory of the John Hopkins University. By FRANK DONALDSON, Jr., B.A., M.D.

THIS paper is an important contribution to a subject which is interesting to surgeons as well as physiologists. The recurrent laryngeal nerve supplies all the intrinsic muscles of the larynx, with the exception of the crico-thyroid. It supplies, therefore, the abductor or respiratory, and the adductor or phonatory muscles of that organ. Since the nerve contains fibres for the supply of two sets of muscles, having separate and distinct functions, the question arises as to how or under what circumstances the one or the other is thrown into action?

It is well known that if anything other than air finds its way into the larynx, it produces, by reflex action, a sudden closure of the glottis. The adductor muscles are five in number, and the abductor two, and the closure of the glottis is attributed to the greater strength of the former. Dr Hooper of Boston published in 1885 a paper entitled, "The Respiratory Function of the Human Larynx, from Experimental Studies." In this article he expressed the opinion that a comparison of the bulk of the two groups of muscles shows that the adductors are but little, if any, larger than the abductors; and he thought that there was another factor independent of the relative strength of the muscles. Dr Hooper considered that while the respiratory (abductor) muscles "are ever on the alert, holding the glottis open during the entire healthy life of the individual, in his waking as well as in his sleeping hours, the phonatory (adductor) muscles, on the other hand, are more dependent upon the *consciousness* of the individual in order to respond to any stimulation." From his experiments he concluded that the constrictors of the glottis cease to act during profound narcosis. Upon dogs which were etherized stimulation of the inferior laryngeal nerve produced abduction of the vocal cord on the same side. As the animal gradually gained consciousness, the abduction resulting from stimulation became less and less marked, until finally the glottis was closed.

Dr Donaldson performed a number of experiments to test the results described by Dr Hooper, and his conclusions differ considerably from those of the latter. He holds that the muscles do not cease to act during profound narcosis or during suspension of consciousness from any cause. That under slight as well as deep narcosis, a weak stimulation causes abduction, which gradually passes into adduction as the strength of the stimulus is increased. It is asserted by the clinicians that the abductor fibres of the recurrent laryngeal nerve are more vulnerable than those of the adductor. Dr Donaldson believes this is due to the greater irritability of the abductor muscles or nerve fibres, which consequently are sooner exhausted than the adductors.

The recent investigations of Semon and Horsley (*Brit. Med. Journal*, 28th August 1886) confirm some of the conclusions of Donaldson. They found that when the larynx was excised directly after death, the postero-crico-arytenoid muscles lost their electrical excitability long before any of the adductors. We consider Dr Donaldson's paper gives evidence of careful experiment work, and his results form a valuable addition to our knowledge of the innervation of the larynx.

Clinical Manual for the Study of Medical Cases. Edited by JAMES FINLAYSON, M.D., Physician and Lecturer on Clinical Medicine in the Glasgow Western Infirmary. Second Edition. Revised and Enlarged. London: Smith, Elder, & Co.: 1886.

A NEW edition of this excellent work has been for some time a desideratum, and we therefore cordially welcome its appearance. In plan the manual remains as it was before, but it is entirely rewritten, and in every way enlarged and improved. More especially is this the case with those portions of the work which are devoted to the investigation of the nervous system and the physical examination of the chest, particularly as regards the application of the graphic method to circulatory, respiratory, and nervous symptoms.

When we mention the fact that it is eight years since the former edition appeared, it can easily be understood that the changes necessary to bring the work up to the present state of knowledge are very great. In the nervous system, for instance, there is the new and important series of symptoms belonging to the reflexes, and the more exact recognition of the different varieties of aphasia; and such advances are but types of the strides which have been made in scientific medicine during the last decade. In every respect, the editor and his fellow-workers have done their best to render this volume an adequate guide to the student of to-day.

The paper and type are a distinct improvement on the former edition, and leave nothing to be desired. We can, in every respect, heartily recommend this work as a reliable and readable introduction to the study of clinical medicine.

A Manual of Urine Testing: Compiled for the use of Matrons, Nurses, and Probationers. By K. M. HEANLEY, Matron of Boston Cottage Hospital. London: H. K. Lewis: 1886.

THIS is a handy little book of forty pages, intended for nurses as a guide to the examination of the urine. It will be welcomed by those of them upon whom this duty devolves, and it will be found to be reliable.

Massage as a Mode of Treatment. By WILLIAM MURRELL, M.D., F.R.C.P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital. London: H. K. Lewis: 1886.

THIS is a useful and well-written monograph on a method of treatment, from which much is doubtless to be gained in certain classes of disease. The writer raises a warning voice against the quackery, by which it is so apt to be discredited, and its association with which tends to make honourable and scientific practitioners look askance at it. The work would have been more useful had an attempt been made to explain more fully the methods used. The subject is treated in an interesting and suggestive manner, and we commend the book to the practitioner.

Synopsis of Therapeutics, arranged for the use of Prescribers, with Pathological Table and an Arrangement of the Poisons. By R. S. AITCHISON, M.B. Edinburgh: Young J. Pentland: 1886.

IN this synopsis a therapeutic classification of the Materia Medica has been adopted, by grouping the drugs according to their physiological action and their uses in practice. This is a very desirable arrangement, and on the whole the classification is correct.

It is a book, however, which is too small for the purposes of the student, and is one which is not discriminating enough for the general practitioner.

It cannot be regarded as a model of elegant prescription writing to give the "hydrochlorate of morphine" in solution. Such a powerful drug, when only *one grain* is ordered in a prescription, should always be prescribed in the liquid form as Liq. Morphinæ Hydrochlorati. This is necessary to ensure accuracy in dispensing.

Dr Aitchison is altogether wrong in supposing that 8 *drachms* by *weight* are equal to one ounce. This would make the ounce consist of 480 grains instead of 437·5 grains.

Materia Medica: A Manual for the use of Students. By ISAMBARD OWEN, M.D., F.R.C.P., Lecturer on Materia Medica and Therapeutics to St George's Hospital, etc. Second Edition, revised in accordance with the *British Pharmacopœia* of 1885. London: J. & A. Churchill: 1886.

THIS "Manual" has many excellencies to recommend it to students. It is, however, far from being correct in all respects. There are not a few errors which should have been avoided. The "hypodermic injections" are not solutions in *plain water*, as stated by Dr Owen. There are only three such preparations in the Pharmacopœia, and two of them are solutions in *camphor water*. Again, *Sabadilla* should be classed with *seeds*, and not with fruits. There are many similar errors, which we hope will be omitted in the next edition.

Botanists generally write the specific names of plants *without* a capital letter, and not with a capital, as is invariably done by Dr Owen.

Chemistry of the Carbon Compounds, or Organic Chemistry. By Prof. VICTOR VON RICHTER, University of Breslau. Authorized Translation, by EDGAR F. SMITH, Professor of Chemistry, Wittenberg College, Ohio. From the Fourth German Edition. London: Henry Kimpton: 1886.

THIS is an able and learned work on the Carbon Compounds, and is well adapted for the advanced student. We have much pleasure in highly recommending it to the notice of all who take an interest in the study of Organic Chemistry.

On Some Common Injuries to Limbs: their Treatment and After-Treatment, including Bone-Setting (so-called). By EDWARD COTTERELL, M.R.C.S. Eng., L.R.C.P. Lond. With illustrations. London: H. K. Lewis, 136 Gower Street, W.C.: 1885.

THIS little book embodies some of the recent contributions to the subject of injuries of the limbs, and collects in a convenient form much useful information, otherwise scattered throughout various journals. Its chief value consists in the description which it gives of the pathology and treatment of various sprains and tendinous displacements, which are not often discussed in ordinary text-books. Had the author limited himself to such-like injuries, the value of his book would have been increased. He has nothing new to say about fracture of the clavicle, dislocation of the humerus, or Colles' fracture, and these sections might have been omitted with advantage. The first chapter is introductory, and deals with "bone-setting" in general. The second treats of "what we have learned from 'bone-setters.'" The third reveals "the harm that bone-setters do." In the fourth chapter, injuries of the upper limb are discussed, including such as dislocation of the tendon of the long head of the biceps, inflammation of the bursa under the deltoid, lawn tennis elbow, and lawn tennis arm, and stone-breaker's and stone mason's arm. In the last chapter "on the lower extremity," among other subjects fracture of the shaft of the femur is discussed, and an apparatus invented by the author is advocated. Present methods, however, are sufficiently satisfactory to render the general introduction of a new and somewhat cumbrous instrument doubtful. The chief value of this part will be found in the short, clearly written sections on rider's sprain, sprained knee, dislocation of the internal semilunar cartilage, and lawn tennis leg.

In so far as much information not otherwise easily accessible is collected in this little book, we can confidently recommend it to our readers.

A Manual of Bandaging adapted for Self-Instruction. By C. HENRI LEONARD, A.M., M.D., Professor of the Medical and Surgical Diseases of Women and Clinical Gynæcology, Michigan College of Medicine, etc. Second Edition. London: Baillière, Tindall, & Cox: 1886.

BANDAGING is not generally learned well from a text-book, and it will require more patience and discrimination than the average student possesses to learn it from this work, which is an admirable one in itself, and very well adapted for one who has mastered the rudiments or has a good teacher to supervise him. It is a perfect cyclopædia of bandaging, and particularly well illustrated—much more profusely so than any other work of the kind we can at present recollect. The applications of rollers and triangles, of adhesive plasters, strappings and immovable dressings, of compresses and cataplasmata, are all detailed in the fullest possible manner. Several of these applications are, however, but seldom employed, and some are not of much practical use. This is the worst that can be said of the volume, which is a most excellent text-book.

The Colloquial Faculty for Languages, Cerebral Localization, and the Nature of Genius. Tentamen Physiologicum. By WALTER HAYLE WALSHE. Second Edition. London: J. & A. Churchill: 1886.

IN this little book we have a number of amusing anecdotes or reflections upon the learning of foreign languages, followed by an attempt to give a popular exposition of the anatomical substratum for the memory of words, with a short account of the physiology of speech. One might have expected more from a man of Dr Walshe's reputation, but it is not to be denied that he has written a book which educated men will read with pleasure, and in which the most learned may find some new illustration or be pleased by some sagacious remark. Dr Walshe's concluding essay on the nature of genius is readable enough, but his explanation of what genius is amounts to little more than the assumption that the brain, or portions of the brain, in men of genius must have unusual potential energy. While thus assigning a physical basis to genius, Dr Walshe will not admit that Galton's inquiries have established that it is often hereditary. He thinks that writer has lost sight of the counteracting evidence of the abounding cases where no family transmission of genius can be traced. In conclusion, Dr Walshe remarks,—"But the infrequency with which genius appears in successive generations of a family in no wise affects the grand truth of the wide distribution and signal power of heredity as a factor in animal physiology. Such infrequency simply proves that the difficulty experienced by Nature in the *primary* evolution of genius holds, as might be anticipated, in her effort at its *secondary* reproduction by inheritance."

We do not see why this failure of Nature to propagate genius might have been anticipated. We believe that some kinds of genius or aptitude are much more frequently transmitted from father to son than others. This especially holds good of music.

South Africa as a Health Resort. By ARTHUR FULLER, M.B., C.M., etc. London: W. B. Whittingham & Co.: 1886.

THIS *brochure* contains a good deal of information as to the climatic influences of South Africa, particularly of the Cape and the Orange Free State, on consumption and other diseases of the chest. The writer also gives practical advice to the health seeker, to whom, as well as to the profession, it may be cordially recommended.

Alpine Winter in its Medical Aspects, with Notes on Davos-Platz, Wiesen, St Moritz, and the Maloja. By A. TUCKER WISE, M.D., etc. Third Edition. London: J. & A. Churchill: 1886.

WE have previously noticed this work in our columns. The only addition to the present issue is a table of meteorological observations taken in the Maloja by the author during the winter 1885-86.

Plantes Medicinales de L'Ile Maurice et des Pays Intertropicaux. Par le Dr CLEMENT DARUTY, ancien interne de l'hopital de Leith, etc. Maurice: General Steam Printing Co.: 1886.

DR DARUTY has industriously catalogued the medicinal plants of the Mauritius, giving in a table their common and scientific names, their active principles so far as known, their properties, and the maladies in which they are found of benefit. He gives, in addition, a therapeutic classification, and a large number of formulæ which will be of interest both to the pharmacologist and therapeutist.

Part Third.

MEETINGS OF SOCIETIES.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVIII.—MEETING II.

Wednesday, 8th December 1886.—DR HALLIDAY CROOM, *President, in the Chair.*

I. *Dr James Young* showed a YOUNG WOMAN whose case, he said, presented some teratological conditions of much interest.

Mary M., æt. 21, consulted him on the 3rd December 1886. She complained of great weakness of the left side—so much so, that she could not maintain the erect posture. On examination of the thoracic walls he discovered the complete absence of the ninth rib on the left side, with slight lateral curvature of the dorsal vertebræ. On coughing there could be observed a large hernial protrusion between the eighth and tenth ribs, especially posteriorly. It was ascertained that the patient had *never* menstruated. A digital examination revealed the existence of a dense *imperforated* hymen. This, taken in connexion with her age, as well as the existence of well-developed mammæ, with large nipples, led us to make still further exploration. Professor Simpson saw the patient with me, and the result of our examination proved the entire absence of all the uterine organs and vagina. The bladder and rectum were normal, while the external appearance of the genitals presented every indication of womanhood.

II. *Dr Foulis* showed his new form of ASPIRATOR.

III. *Prof. Simpson* showed a SPECIMEN presenting velamentous insertion of the umbilical vessels at a point in the membranes remote from the margin of the placenta. It was interesting from the fact of a vessel in the form of a cord running from the root of the cord to a destroyed lobule of the placenta. The labour went on naturally.

IV. *Dr Leith Napier* showed (1) A FOLIACEOUS FŒTUS.

Mrs M'K., ætat 36, married July 1874. Six previous pregnancies. Her mother had twins twice. Both her grandmothers had twins twice. Patient menstruated last in February 1886. Confined naturally on 20th October 1886. The points of interest in the case were, that both the fœtus shown and the mature healthy living fœtus were confined in one amniotic sac. No trace of placental connexion existed between the atrophied fœtus and the placenta, except a certain thickening of the amnion near the fœtus, which might probably have been the remains of a separate imperfectly formed placenta. Pressure may have caused absorption of the chorion, and the fœtus would in this way perish. In the placenta and membranes shown there was no sign of disease or insufficient development, so that the case bore out Guillemot's contention, that death in these cases was explained by pressure and not by primary placental disease or detachment, as suggested by Cruveilhier, Caseaux, and Tarnier. The fœtus, which was a most excellent example of the variety, was matured to about 2½ to 3 months.

Dr Leith Napier also showed (2) A COMPLETE ABORTION. The membranes, with the exception of an aperture the size of a threepenny piece, were intact, and lay loosely over fœtus and placenta. Mrs B., married in beginning of 1885, on 25th Nov. 1885 aborted at the fourth month. In April 1886 a two months' pregnancy was diagnosed. She had some uterine pains in May, but under treatment by viburnum prunifolium these passed off. She continued taking the medicine till the second week in June, when she ceased treatment. Aborted on 20th June. The fœtus was very shrivelled in appearance, and was not developed over 3½ months at most. Probably it died sometime before pains came on. It was rare to find an abortion so perfectly complete at this period.

(3) A MULTILOBULAR FATTY TUMOUR REMOVED FROM THE RECTUS MUSCLE. It seemed to increase in size at the periods, and was then the site of neuralgic pains. Since its removal the neuralgic symptoms had disappeared.

(4) A VAGINAL AND INTRAUTERINE LUBRICATOR. This resembles in principle very much what Dr Godson had recommended, viz., a lubricant carried in artists' colour tubes, but had been invented by Dr Napier of Egremont, Cheshire, who was ignorant of Dr Godson's idea. The appliance shown consists of a tube containing 4 or 5 oz. of "duroleum" (a variety of vaseline) medicated with acid carbolic, hydrarg. perchlor., or other disinfectant, and a nozzle of celluloid which may be altered with heat to any curve. The uses of the instrument were evidently various, *e.g.*, for lubrication of the hands, forceps, catheter, etc.; with the tube the passages and perineum might be lubricated; in ante-partum hæmorrhage, applying the nozzle, an antiseptic material might be easily and gently applied on top of tampon if such were indicated. After labour, if any cervical or vaginal cracks, tears, or abrasures existed, its use was evident. In these cases it is often most difficult to apply any dressings without the risk of these becoming quickly fœtid, and, besides, preventing lochial egress. For intrauterine medication a slightly longer nozzle was used. One nozzle did for any number of tubes; the celluloid could be easily disinfected; possibly glass nozzles might be preferred by some, but the celluloid had certain advantages already referred to. With 1·30 acid carbol., the cost of the filled tubes is 9s. a doz., the nozzle costs 1s. or 1s. 6d. Lanolin might be employed as a vehicle at a slight increase of cost. Ferris & Co., of Bristol, are the makers.

V. *The President* read a paper on TWENTY-TWO CONSECUTIVE CASES OF ABDOMINAL SECTION, which appears at page 673 of this Journal.

Professor Simpson thought that every member present could not but congratulate the President on his successful series of cases. The conclusions arrived at were sensible, and would help us in the management of like cases. He sympathized with Dr Croom in his fatal case; the patient was so far reduced that she was unfit to stand any operation, but the operation was her only chance of recovery.

Dr Bruce asked if antiseptic precautions were employed.

The President answered in the affirmative, but added that the spray was not used during the operations.

Dr Berry Hart asked whether, in removing distended Fallopian tubes that were likely to burst, it would not be better to tap them first. He considered that Dr Croom deserved great credit for his cases, as he had not selected them. Operators should always endeavour to relieve patients, and not think of their own personal credit.

Dr Skene Keith thought it was most important that all cases should be reported, and all results given. He would like to know how soon after the operation the patient with phlegmasia dolens was allowed to get up. He allowed no patient to sit up after an operation till the twelfth day, or to get up till the fourteenth day. By so doing he found that the number of cases of phlegmasia was lessened. Dr Skene Keith felt sure that the ovaries had to do with the return of menstrual discharge after operation; but in two cases where the uterine appendages had been removed for fibroids, menstruation had returned. The tubes have nothing to do with menstruation. In one case, where he removed both ovaries, excessive hæmorrhage took place seven months afterwards, and since then two slight hæmorrhages have occurred. Dr Keith removed one ovary and left in a small piece of the other in the case of a fibroid, and flooding occurred afterwards. Dr Keith again operated and removed the small piece of ovary left in, and the patient has only had one attack of hæmorrhage since. Sexual appetite is an important point, but the result on it of removal of the appendages cannot be foretold. He does not agree with the President that it is right to examine patients under chloroform, as the chloroform takes away the pain, and it is possible to burst a pyosalpinx when the patient is under the influence of the anæsthetic. Dr Keith removed, in one case, one ovary entirely, the other not completely, and a hæmatocele formed afterwards. With regard to the case of the President's in which hæmorrhage occurred from a sinus in the wound, it was possible that there existed a connexion between the ovary and the sinus. Relief of symptoms should take place sooner than a year after operation. All parovarians should be tapped; when tapped they never come back, and there is no risk as the fluid is simple. In the case of malignant disease of the omentum, if the fluid had been examined beforehand the operation would have been found unnecessary.

Dr Foulis congratulated the President on his extremely gratifying results. He had the great pleasure of witnessing Dr Croom's first operation, and was struck with the dexterous manner in which it was performed. Since then Dr Croom has had the greatest success. Results now in ovariotomy are remarkable compared with former years. The fearless way in which the peritoneum is now handled would have alarmed our ancestors. The power we now possess of cleansing the peritoneum with antiseptics is very valuable. With regard to the diagnosis of fluid, in every case of abdominal tumour surrounded by ascitic fluid, that fluid should be examined before operation. The peritoneum is liable to be affected secondarily from tumours; this could be diagnosed by tapping and the examination of the fluids.

Dr Craig remarked that as statistics could be twisted in any direction, fatal cases should always have the cause of death distinctly stated.

Dr Leith Napier asked if it would not be better to leave cases of malignant disease of the omentum alone. He thought if the ovary was alone affected that it should be removed. With regard to sexual appetite, he remarked that some of the most prolific women take least interest in the sexual act. Sexual appetite is not necessary for procreation. He was of opinion that hysteria and ovarian disease are separate, and that removal of ovaries will not cure hysteria.

Dr Freeland Barbour thought it was very good of the President to put Case XXI. in his series, and that it would be more correct to say that the mortality was 1 in 21 cases. With regard to the diagnosis of the case of malignant disease of the peritoneum, he thought it was right to make an exploratory incision, and there was nothing to justify saying that death was hastened by the operation. The case of hæmato-salpinx was interesting from its gradual increase in size. The gradual increase justified operation. Dr Barbour differed with Dr Skene Keith about the treatment of parovarians.

Dr Skene Keith remarked that tappings do not affect patients' feelings so much as operations do. The patients must be young, and the sac must be thoroughly emptied, to ensure success.

Dr Berry Hart said it is our first duty to do our best for our patients, and not to allow their feelings or those of their friends to influence our treatment. There may be papillomatous growths inside the tumours, which, when tapped, may invade the peritoneum.

Dr Ritchie remarked that Lawson Tait had given up tapping, and that now he had no recurrences in other structures.

The President thanked Prof. Simpson for his kind remarks. It was hardly possible to indicate the condition of the patient on whom he performed hysterectomy *vivâ voce.* The patient was so ill at one time that she could not be operated on. He could not tap his cases of hæmato-salpinx, and there could have been no advantage got from tapping, as they were filled with solid matter. The patient affected with phlegmasia dolens did not leave her bed for two months. In regard to hæmorrhage occurring after the removal of ovaries, in a case where Lawson Tait removed both ovaries for a large fibroid, a profuse flooding occurred seven months afterwards. Sexual appetite does not enter into women as much as is supposed. The consideration of it certainly did not enter into his cases, as they were all performed to save life. He cannot say what menstruation is caused by. Lawson Tait, at a meeting in London lately, said he did not know the cause of it. He agreed with what Dr Skene Keith said about examining patients under chloroform; it was possible to cause rupture of a pyosalpinx where a patient is insensible to pain. In discussing the treatment of parovarians, the question is whether you should tap or open the abdomen. Against the latter course it may be urged that hernia may result. If you make a wound 1 inch long, it is unlikely that you will have a hernia through that. We all recognise what Dr Foulis has done in the way of the examination of cells. In conclusion, he thanks the Society for the way in which they have received his paper.

THE GLASGOW OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

THE third meeting of this Society for the present session was held in the Faculty Hall, St Vincent Street—Dr Samuel Sloan, President, in the chair.

After ballot, the following gentlemen were duly elected Fellows, viz.,—Drs W. W. Anderson, Richard H. A. Whitelock, S. George Campbell, and Mr Skene Keith, F.R.C.S.E.

Dr John Glaister then showed—(1), A TYPICAL BATTLEDORE PLACENTA, and (2), SPECIMENS illustrating effects of INJURY IN A TWIN PREGNANCY. The latter specimens consisted of a placenta and fœtal remains, with about 6 inch funis attached, obtained at the accouchement from Mrs R. on 18th November. The living child was a female at full time. The presentation was the first cranial, the placenta followed immediately, and the mother made a good recovery. Dr Glaister said,—"At the beginning of labour, when the os was dilated to the size of a crown piece, I felt beside the presenting head, between it and the uterine wall, a sharp projection, not very extensive. I at first thought it might be the edge of a calcareous placenta, but, as labour advanced, I inserted two fingers beyond this point, and, finding it movable, brought it away. An irregularly-shaped flat body, it proved to be the remains of a fœtus about 3½ months old, judging from its size. The limbs are apparently intact, except one of the forearms, the bones of which are to be found embedded in the membranes. It is evident that inflammatory action had followed the death of the fœtus, since one of the feet is found attached by a lymph deposit in the form of a band to the body, and other parts show traces of lymph formation. The cord is still attached to the body. The placenta was in one mass, divisible, however, into two distinct portions in the following way:—1st, The larger portion of it was composed of ordinary placental tissue of the usual flesh colour; 2nd, The smaller portion consisted of degenerated tissue of a markedly white colour, evidently that portion which had nourished the dead fœtus up till the time of its death. There was only one chorion and one amnion. The history of the patient evidenced that when she conceived herself to be 3½ months' pregnant, she sustained a severe fall down a narrow spiral iron stair, whereby she was severely bruised."

Considerable discussion ensued, which in the main was favourable to Dr Glaister's theory, that the fall was the cause of the death of the twin, and that its death led to the changes observed in the placenta.

Dr Robert Pollok exhibited a FŒTUS which showed signs of maceration.

Dr W. L. Reid then exhibited a FŒTAL SKULL, and gave a narrative of the case, from which it appeared that the mother had been admitted into the Maternity Hospital suffering with dystocia from disproportion, after the accoucheur outside had failed to deliver with forceps. A fatal result ensued to the fœtus, which was delivered after basilysis, and to the mother thirty-six hours post-partum from purulent cellulitis and embolism. The post-mortem appearances were detailed at length.

Dr Sloan thought the case illustrated the danger of basilysis. He thought, possibly, pre-existent pyosalpinx and acute septicæmia might account for the rapidly fatal result to the mother.

Dr Abram Wallace advocated cephalotripsy.

Dr Glaister also favoured cephalotripsy, and thought that the history of the case, as well as the facts of the post-mortem, clearly pointed to acute cellulitis and cardiac thrombosis as the cause of death to the mother.

Dr Park agreed with the previous speakers as to cephalotripsy being a preferable operation to basilysis, and with Dr Glaister as to the cause of death in the mother. He dwelt on the absence of peritonitis as being unfavourable to the septicæmic theory.

Dr Campbell mentioned that the patient's pulse was very quick before delivery, and thought the temperature and pulse should both have been noted post-partum.

Dr Reid admitted that he had most faith in the cranioclast, and thought Dr Glaister had taken the correct view of the cause of the mother's death.

Dr J. K. Kelly then read a paper entitled A REVIEW OF THIRTEEN YEARS' PRIVATE OBSTETRIC PRACTICE.

After guarding himself by premising that there are two kinds of imperfections besetting a review such as this, viz., those inherent in the recorder, as, to wit, his haste, his insufficient acquaintance with the bearing of all the events that occur, and his want of opportunity and skill for scientific investigation, and those inherent in the present condition of general practice, he said that his results were given as approximately and not absolutely correct.

In the thirteen years 1873–1885 he had attended 2823 confinements, at which 2868 children were born.

After quoting Matthews Duncan, A. H. M'Lintock, and Florence Nightingale, as to the estimated mortality of childbed in hospital and private practice, he said that Duncan owned to a death-rate of 1 in 105 in his private practice alone, Sir J. Simpson 1 in 45, M'Lintock 1 in 108, and Dr Clarke 1 in 174.

His own mortality had been 1 in 166, or 17 in 2823. But, as the mere aggregate mortality of childbed is not a true gauge of the death-rate of the puerperium from causes solely connected therewith, it became necessary to exclude such deaths as had arisen from causes foreign to pregnancy and parturition.

The causes of the 17 deaths were as follows, viz. :—

1. 1873, a i.-para, on 10th day, from metritis, due to delay in using forceps.
2. „ a ii.-para, 4 months after, from uterine tumour and metritis.
3. 1874, a i.-para, on 14th day, from rheumatism and exposure.*
4. „ a i.-para, on 4th day, from metritis.
5. „ an xi.-para, on 6th day, from eclampsia commencing 8 hours p.-p.
6. 1877, a i.-para, on 2nd day, from eclampsia.
7. „ a i.-para, on 6th day, from metritis.
8. „ a v.-para, on 7th day, from puerperal fever.
9. „ a i.-para, on 47th day.
10. 1878, a i.-para, on 15th day, from dysentery.*
11. 1879, a iv.-para, on 19th day, from pneumonia.*
12. „ a i.-para, on 6th day, from eclampsia.
13. 1881, a ii.-para, on 35th day, from gastric ulcer.*
14. „ a ix.-para, on 5th day, from scarlet fever.*
15. „ a iii.-para, on 5th day, from puerperal fever.
16. 1882, a ii.-para, on 9th day, from retained placenta.
17. 1884, a vii.-para, on 7th day, from puerperal fever.

Deducting the 5 deaths marked *, as arising from causes not due to parturition, he reduced the mortality from 1 in 166 to 1 in 235·2.

In order to approximate a "normal rate," such as ought to be reached were puerperal women attended and watched with due care and skill, he further deducted No. 1, which he imputed to his own delay in using the forceps, and No. 9, which he imputed to careless nursing. He thus arrived at a mortality of 1 in 282·3.

Taking the last six years of his practice as embodying the results of riper experience and practice above the level of the very poor, he found he had attended 1233 cases with 5 deaths, or 1 in 246·6. From these 2, due to scarlet fever and gastric ulcer, should be deducted, thus leaving 3 due to puerperal causes, or 1 in 411.

In 762 primiparæ, the deaths *from all causes* were 8, or 1 in 95·2.

In 2061 pluriparæ, the deaths *from all causes* were 9, or 1 in 229.

This seemed to corroborate Duncan's conclusion, that the mortality of first labours is about twice that of all subsequent labours. Dr Kelly, however, was not prepared to admit that that conclusion was the correct one. He inclined to believe that the risks arising from the peculiar circumstances of the primipara—her inexperience, her greater liability to some forms of disease, the rigidity of her passages—a possibly contracted condition of a pelvis as yet untried, are nearly balanced by the risks arising from the advancing years, and exhausted uterine as well as general health of the multipara. To illustrate this, he again selected the last six years of his practice. The result is—284 primiparæ with no deaths, and 949 pluriparæ with 3 deaths due to puerperal causes, or 1 in 316·3.

He found also that his experience did not confirm Duncan's conclusion, that after a ninth pregnancy a woman again becomes subject to extraordinary and increasing risk. In the last six years he had had 27 cases of 9th pregnancy, 7 of 10th, 2 of 11th, 1 of 12th, 5 of 13th, 1 of 14th, 2 of 15th, 2 of 16th, and 1 of 19th, and only one death, and that from scarlet fever, after a ninth confinement.

Passing to the question of infantile mortality, Dr Kelly said that of the 2868 children born, 104 were *still*, and 49 died within a few days after birth. As, however, 110 of the children were premature, he thought it was necessary to exclude them by referring them to a separate class. Of these 110, 42 were still, and 28 died shortly after birth.

In addition to these, he thought the twin and triplet children might be reckoned premature. Of these there were 89, of whom 5 were still, and 7 died shortly after birth.

Deducting these two classes, he had 2669 children born at full time, of whom 57 were still, and 14 died shortly after birth, giving an infantile mortality of 1 in 37·5.

The causes of this mortality were in

	7	cases,	probably	cold and exposure.*
	2	,,	,,	smothering by bedclothes.*
	1	,,	,,	erysipelas starting at umbilicus.*
Still	3	,,	,,	maternal alcoholism.*
Still	3	,,	,,	maternal convulsions.*
Still	1	,,	,,	maternal goitre (?)*
Still	1	,,	,,	pneumonia.*
	1	,,	,,	scarlet fever.*
Still	3	,,	,,	early separation of placenta.
Still	3	,,	,,	contracted pelvis.
Still	3	,,	,,	maternal syphilis.
	2	,,	,,	placental disease.
	1	,,	,,	tetanus neonatorum.
	23	,,	,,	delay in extraction—abnormal presentations.
	6	,,	,,	diseases of fœtus (malformations).
	11	,,		not known.

Excluding those causes of death which had nothing to do with the parturition (marked * in the list), 52 cases are left, giving a full-time mortality of 1 in 50·3.

Taking, however, as previously, the results of his last six years, he had an approach to a better mortality. In 1186 full-time births there were 22 still (or dead soon after birth), equivalent to 1 in 53·9, but as of these 5 were due to causes extrinsic to parturition, the true percentage was 1 in 69·7. This means that without counting abortions, and excluding premature labours, and reckoning only the cases in which the child has been carried into and often to the very end of the ninth month, the expectation of the mother is still liable to disappointment in about every fiftieth or sixtieth case!

As to the mortality in the various presentations, in 2669 births there were 2619 presentations of the cephalic extremity, including 2607 cranial, 9 face, 2 shoulder, and 1 arm.

Excluding the two latter, and including with the cranial 6 cases wherein the cord was prolapsed alongside the head, the mortality of 2616 cases was 59, or 1 in 44·3. Deducting from this 16 cases in which death was due to causes unconnected with parturition, we have 43 deaths, or 1 in 68. In the last six years there were 15 deaths in 1166 cranial presentations, or 1 in 77·7.

There were 63 breech cases—1 in 45·5. With these were classed the footlings, 12 in number, or 1 in 239, and the knee cases, 2, or 1 in 1434, making in all 77 cases of presentation of the pelvic extremity, or 1 in 37·2. Of these, 25 were either premature or twin cases, leaving 52 full-time cases, or 1 in 51·3, and of these 25 occurred in primiparæ and 27 in pluriparæ. Of these, 10 were still—1 in 5·2.

In 3 cases the fœtus was dead prior to the inception of labour. In 1 case, through the ignorance of the nurse, the child remained half-born for half an hour. In 6 cases, delay in extraction was responsible owing to disproportion, 5 being primiparæ with very large children, and the sixth, pluripara, æt. 42, none of whose children had survived the process of extraction—4 in all.

As to the assistance rendered, forceps were used 272 times, or once in every 10·5 cases, and 150 of these was in the case of primiparæ, or once in 5·1. This gives a proportion of 1 in 17·1 pluriparæ. Of the 272 cases, the maternal mortality was 7, or 1 in 38·8. But of this number there is only one—a case of puerperal metritis—which could with even a shadow of probability be referred to the use of forceps, and one was directly due to delay in using these. It was his first forceps case, and with lectures against "meddlesome midwifery" still ringing in his ears, he deferred "meddling" till the patient was exhausted to such a degree that she never rallied. The other causes were rheumatism 1, convulsions 2, gastric ulcer 1, and careless nursing 1.

In the last six years he had had 132 forceps cases with no maternal deaths, except one due to gastric ulcer with violent hematemesis, for relief of which labour had been induced. The infantile mortality in the 272 cases was 1 in 12·9, being 21 cases in all. 8 were immediately due to long-continued compression of the head; 3 to maternal convulsions; 2, contracted pelvis; 2, funis presentation; 1, head and foot presentation; 1, deformity; 1, placenta prævia; and 2, unknown.

In the six years, in 132 cases, 8 children were still or died soon—1 in 16·5; 4 from compression; 1, maternal convulsions; 1, funis presentation; 1, placenta prævia; 1, unknown.

One of three reasons determined the use of the forceps—(1.) Inertia; (2.) Large head; (3.) Small pelvis. These are in great measure convertible terms; for labour which might be strong enough to expel a small child might be inadequate for the expulsion of a large one. Again, a head which is small for one pelvis might be too large for another, and a pelvis that is contracted in relation to one head may be spacious for another.

Such cases were therefore classed under one head, and along with them two cases of face presentation in which forceps were used, as well as one foot with head, and two hand with head, cases of inefficient labour requiring extrinsic aid.

In a second class were ranked those where forceps were used merely to expedite labour, as, *e.g.*, maternal convulsions, with a view to arrest these and save the mother's life.

In a third class were placed funis presentations in which labour was hastened with a view to saving the infant's life.

Two considerations had always led Dr Kelly to use the forceps in cases where, if he had followed the teaching of either Leishman,[1] Schroeder,[2] or Barnes,[3] he would not have used them. 1st. It is *practically* impossible to measure the conjugate diameter to within a few eighths of an inch in the parturient woman, and the practitioner has no correct test of the capability of the pelvis if he does not test it by the head of the fœtus itself, and if he is to apply this test, he must do so in a genuine and not in a timid or hesitating way. His practice had led him to believe that the lesions to vagina, bladder, and rectum, which are attributed to violence, are more probably due to long-continued pressure. Anyhow, he had never seen either a recto-vaginal or a vesico-vaginal slough or fistula, and thought it only reasonable that a force which acts only for a few minutes was much less likely to do injury than one which, though it may be somewhat less in intensity, is maintained in action perhaps for hours.

2nd. Even if the diameters of the pelvis could be exactly measured, such measurement could give no satisfactory test of the capability of the pelvis, for there is a factor which may disturb even the most careful measurement, viz., the distensibility of the pelvis. The mobility of the pelvic joints in pregnancy is referred to by almost all obstetric authors, and especially by Leishman and Barnes, whom he quoted. He thought that anyone who carefully watched the progress of a labour, especially when a large head was engaging at the brim, could hardly fail to note a change in the direction of increased capacity. Often, even when regarding the bedclothes, the patient being on her left side, a very marked elevation of the right hip may be noted. This erection denotes an increase in the cavity of the pelvis, and is the explanation of the greater ease with which labour is completed in the sitting posture or on the knees. In these postures, the sacro-iliac articulations of both sides are allowed free play, whereas in the posture on the left side the weight of the body pressing on the left hip bone to some extent prevents its motion on the sacrum.

These two considerations, then, had led him to use the forceps not in a "gentle attempt," as Leishman phrases it, but in a thorough-going way, in every case of contraction, however great, in which it was possible to seize the fœtal head with that instrument. He had had 10 cases of abnormally small pelves—1 in 282·3 cases. Forceps were used in every one without any maternal mortality, but with 3 still-born infants.

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[1] *System*, p. 521. [2] *Ibid.*, p. 259. [3] *Ibid.*, II., p. 582.

He had had 8 cases of eclampsia—1 in 353. One was a pluripara with her eleventh child. Convulsions began eight hours after labour, and she died on the sixth day. The other 7 were primiparæ, in whom the convulsions began at the inception of labour. In them the forceps were used for rapid delivery. Two mothers died, and four of the children were still-born.

In the third class, where the forceps were used to save the child's life, he had never seen a case of pure funis presentation. He had met with it six times, and each time it had been a complication of a head presentation. In one the labour was so powerful and expeditious, that it was terminated successfully without help. In another, I turned and delivered by the foot. In the remainder I used the forceps. All were multiparæ, and in the forceps cases two of the children were living and two still.

He preferred forceps to turning where the pelvis was small in relation to the head (usually the case in these presentations), because (*a*) he had more power over the progress of the labour, and (*b*) the child's head was in a more favourable position for passing through the pelvic canal without delay.

He always used straight forceps, as its chief function was not to be able to grasp the head easily, but to draw it, easily if possible, through the pelvis. It is an instrument through which a great amount of force is transmitted, and it cannot be transmitted in a curved direction. Thus Tarnier demonstrated that in using forceps with a pelvic curve, one spent nearly half their force in trying to split open the pubic symphysis, and the other half only went to effect the real object in view, viz., the traction of the head in the direction of the pelvic axis. To obviate this loss of force, he designed his axis-traction forceps. Dr Kelly thought these an unnecessary invention, as he had never seen a case where he could not seize the head at the brim with the straight forceps. He saw no objection to pressing on the perineum by the forceps, if necessary to do so, in order to get a good grasp of the head. The pressure of the shanks of the forceps upon the perineum partially stretch it, and prepare it for the greater stretching which will come when the head reaches it.

He had never hesitated to use forceps whenever he thought he could render assistance, and he thought that there was only one limit to this interference which could be clearly formulated. Forming a clear conception of the effect we desire to produce, we should interfere only so far as is necessary to produce that effect. We should not set any force in operation whose amount we cannot exactly measure and regulate with a view to the desired effect. On this ground he objects to the administration of ergot, as it supplies a stimulus to the womb, which is measurable neither in its force nor in its duration, and would be justifiable only if we could use no other stimulus, the force and duration of which we have under control. He had never found occasion to use ergot in his own practice. Uterine action can be stimulated by dilating the os, by rupture of the membranes, by friction and pressure of the abdomen—all means which are absolutely under control. These being inadequate, we can always terminate the case by the forceps as soon as the os is sufficiently dilatable, if there is any indication that a speedy delivery is required.

He objected further to the use of ergot, owing to the dangerous effects liable to be produced on the fœtal circulation by the persistent contractions set up.

He had never seen post-partum hæmorrhage, and had never had a death from it, and had therefore never administered ergot post-partum.

He believed a firm pad, well placed under a tight-drawn binder, the most effectual prophylactic of post-partum hæmorrhage, by inducing active uterine contraction, and maintaining apposition of the uterine walls.

He also objected to chloroform. He had seen it used, and assisted in administering it, and had used it in one case himself, but he had not seen sufficient benefit from its use to make him cease to prefer the active co-operation of a rational creature in the fulfilment of a natural function, apart altogether from the danger inherent to chloroform itself.

Dr Kelly concluded by detailing some of the more unusual occurrences which he had experienced. He had had 2 shoulder and 9 face presentations; one case of triplets, and 43 of twins; 2 of placenta prævia; 17 of adherent placenta; 2 phlegmasia dolens; 2 puerperal mania; and 2 pelvic cellulitis going on to suppuration. Then as to fœtal deformities, he had met with 3 cases of spina bifida (2 cervical, 1 lumbar); 2 anencephalous; 3 harelip; 2 absence of left hand; 3 hydrocephalous; 1 apparent absence of cervical vertebræ (lived seven days); 1 epispadias. The details of this last are as follows:—"The upper surface of the penis presented the appearance as if the urethra had been slit open along its upper wall, and spread out. The urine issued from under the arch of the pubis along this upper surface. Early in pregnancy, the mother had heard of a neighbouring Jew's child which had been circumcised, and had died in consequence. Her mind had often recurred to this, and she had hoped that her child would be 'like the world.'"

Two of his patients had taken scarlet fever during the puerperium, with the result that one died and one lived.

He had noted many cases where long periods had elapsed betwixt pregnancies, married life being uninterrupted.

He had had many cases of ruptured perineum, but had never performed perineorraphy, and thought the number of cases where that became necessary was very small in proportion.

He had never seen a case of injury to the bladder, such as a vesico-vaginal fistula, though he had frequently had to deal with temporary retention.

On the motion of *Dr Turner*, seconded by *Dr Reid*, the discussion was adjourned.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Pulsatilla.—In the *British Medical Journal* for 15th December Mr Gerard Smith strongly recommends pulsatilla in "inflammatory states of the testicle, epididymis, and spermatic cord." He says it "subdues promptly the intense suffering of such cases; and the relief is so rapid that it is even unnecessary to employ morphine to subdue the pain, whilst the swelling and heat subside more rapidly than under any other drug."

Hydrastis Canadensis.—Dr Woltering, of Munster, confirms, in a paper published in the *Allgemeine Medicinische Central-Zeitung*, No. 47, 1886, the favourable results obtained with *Hydrastis canadensis* by Fellner and other therapeutists of note. The styptic virtues of the drug, especially in uterine fibromyomata, are very pronounced. Thus Woltering saw cessation of the hæmorrhages in three cases of fibro-myoma with a uterus length of 9 and 8 ctm. In one of the cases the uterus length had at the end of one year decreased 2 ctm. True, besides the drug the patient had had the benefit of long-continued self-tamponage and warm washes. The remedy was ordered in pill form on account of its unpleasant taste. Ten grammes of the fluid extract can conveniently be evaporated down to about three grammes of a dry extract, furnishing an excellent pill mass. Woltering orders usually as follows:—

℞ Extr. hydras. canad. sicci, 6·00
(To be prepared from fluid extr., 20·00);
Extr. secal. corn.,
Ferri redacti, āā 3·00. M.
F. pil., No. 120.
S.—Two to five pills every three to four hours.

Of course morphine, aloes, or any other indicated remedy, could be incorporated with this styptic. The above pills are taken readily and well borne, especially when taken during or after the meal. Woltering claims that neither wine, aromatics, nor liquorice cover the taste of hydrastis canadensis sufficiently. In simple hæmorrhagic endometritis the remedy renders also excellent service. In profuse bleeding from the lungs and stomach, however, a tablespoonful of oil of turpentine appears to be preferable.—*Therapeutic Gazette*, December 1886.

ANCHIETEA SALUTARIS.—The root of *Anchietea salutaris*, a violaceous plant, having a popular reputation in Brazil as a remedy in skin diseases, has been recommended as useful in syphilis (*Chemiker Zeitung*, 1886, p. 619). The dose is 0·1 to 0·35 gm. of the powdered root daily, and the drug is also administered in the form of a syrup prepared from a tincture of the root. In consequence of the drug being used for syphilis, and provoking a flow of saliva, it shares with some other substances the name of "vegetable mercury." Some years since Dr Peckoldt called attention to the usefulness of the drug in skin affections. He administered the powdered root, commencing with 0·35 to 0·70 gm. three times a day, and gradually increasing the dose. The first effects are drastic, but these pass off after a day or two. Dr Peckoldt isolated from the root bark an alkaloid which he considered to be the active principle, and named it "anchietine."—*Therapeutic Gazette*, December 1886.

GYMNOCALDUS CANADENSIS.—We abstract the following note about this drug from the September number of *La France Médicale*:—The seed of *Gymnocaldus canadensis*, which is also known by the name of Kentucky coffee-bean, has the reputation of being a powerful toxic agent, resembling Calabar bean, with which it is allied. The watery extract of the drug modifies the sensibility considerably. Five minutes after a hypodermic injection of this preparation the frogs were insensible, and would not respond to irritation. With a moderate dose the sensibility of the conjunctiva remained, and on increasing the dose the anæsthesia became complete; perception and sensation became abolished. Motor troubles, consisting of general convulsive movements, the rigidity and subsequent paralysis of the muscles being complete, resulted. These phenomena had their origin in the central nervous system. The drug, besides, lessens the activity of the cardiac nerves, and acts as a stimulant to the pneumogastric nerve. The cardiac pulsations are diminished by one-half; and, finally, there is a lowering of the arterial tension.—*Therapeutic Gazette*, December 1886.

SULPHATE OF SPARTEINE.—Hans Voigt, working in Nothnagel's Clinic, has come to the following conclusions respecting the therapeutical action of sulphate of sparteine. In small doses the salt increases the efficiency of the cardiac contractions, and raises the arterial pressure. The number of heart-beats is always increased. These effects are observed within an hour of the administration of the drug, and continue for twenty-four hours. The author recommends the suspension of the administration of the drug for some days, but it may be given for a week without risk. The remedy does not always regulate the rhythm of the heart-beats. Its action on the respiration is variable. Diuresis appears to take place in proportion to the improvement of the cardiac action. A beneficial sedative action is often observed. Headache, vertigo, malaise, and other objectionable symptoms were but rarely met with as the result of the administration of small doses. The dose employed has been from 1 to 4 milligrammes ($\frac{1.5}{100}$ to $\frac{6}{100}$ gr.) It will be remembered that in See's hands much larger doses, 5 to 20 centigrammes ($\frac{8}{10}$ to 3 gr.), were tolerated without cumulative or other objectionable effects (*Lancet*, September 1886).—*Therapeutic Gazette*, December 1886.

GOITRE TREATED BY CARBOLIC ACID.—Dr O. E. Haven states, in the *Weekly Medical Review*, 11th September 1886, that he has met with a large number of cases of goitre in the public clinics in Chicago, all of which have been materially benefited, and almost all cured, by the injection of 20 or 30 minims of a 5 per cent solution of carbolic acid once or twice each week into the substance of the gland itself. To do this thoroughly the needle of the hypodermic syringe is inserted one-half to one inch into the gland, and then the injection is made. Little or no pain is experienced, but only a feeling of dizziness, of which all the patients complain, and which passes away in a very few minutes. Usually this injection causes a contraction and a hardening of the connective tissue of the tumour and a gradual lessening of the blood-supply, and in the course of eight or ten weeks a complete disappearance. Out of the 150 or 200 cases treated in this manner there were only two cases where any inflammation and feverish symptoms appeared, and in these cases they only lasted a day or two. The treatment is simple, almost entirely painless, as the smallest needle of the hypodermic syringe can be used, and is entirely effective. No other treatment can show such uniformly successful results.—*Therapeutic Gazette*, December 1886.

MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

Berlin. Klinische Wochensch., No. 51, 1886.—A case of primary myositis of the muscles of the calf, which was in the wards of

Kussmaul, Strasburg, is described at length. The chief symptoms, shortly put, seem to be the following:—

1. The disease begins in early youth, without hereditary predisposition or myo- or neuro-pathic histories in the family.
2. The development of the disease in most cases follows isolated attacks, which succeed each other at unequal periods of time. The disease has a decidedly progressive character, a complete suspension of the process never taking place, although long pauses may be occasionally observed.
3. The isolated attack is characterized by pains now in one, now in another, muscular group; the painful parts have a doughy œdematous feel, which usually disappears in the course of a few days.
4. The attacked muscles then are found to have a bony hardness, and a complete inability to perform movements.
5. The osseous formation in the muscles may also form without pain, very gradually, and even without the consciousness of the patient.
6. Not only the muscles, but also the whole osseous system, shares in the morbid process, and hyperostosis and exostosis are to be found, as well as synostosis from ossification of ligaments.
7. Besides the ossification there is generally to be seen hyperplasia of many connective tissue parts, strong development of fasciæ, and new formations of tendinous bands.
8. While isolated muscles ossify in the manner described, others atrophy, a few undergo fibroid or fatty degeneration.

A few authors consider the disease to be a primary parenchymatous muscle-inflammation, and the participation of the intermuscular connective tissues is a secondary phenomenon. They therefore think the process a purely myopathic one, look on it as a kind of tropho-neurosis, and see analogies between it and progressive muscular atrophy and hypertrophy. Mays, on the other hand, believes the pathological offstart of this disease is from the skeleton, from the tendons, fasciæ, and intermuscular connective tissues; the seat of the ossification extends far beyond the muscular system. Mays therefore believes that the beginning of this myositis ossificans takes place in the connective tissues of the motory apparatus, which, as Virchow has indicated, is the seat of multiple osteomata. The last named author emphasises the fact that not all connective tissues share in the pathological process; but that, for example, the subcutaneous one remains free. Besides these pronounced cases of myositis ossificans, there are a certain number of others which, as it were, are transitional, and form the bridge between myositis and the bone-forming diathesis, as exemplified in muscular osteomata and rheumatism.

In near connexion to those transitional forms, which connect myositis and the bony diathesis, are the cases which Froriep has described under the name of "rheumatic indurations."

Froriep distinguishes several sorts of indurations (*Schewiel*), but lays the chief importance on the so-called cellular tissue and muscle indurations. The rheumatic exudation has, in the former, its chief seat in the cellular tissue, most in the subcutaneous layer, but also in the corium, in the cellular tissue, under aponeuroses in the muscles, and in the periosteum. The colour of the skin over those swellings is somewhat altered: the skin over them does not pit, and it cannot be raised into a fold. In the muscular swelling the muscle becomes hard, stiff, and felted to the feel; its volume diminishes somewhat, atrophies, and thickens, so that, felt through the skin, it gives one the feeling of a firm, tendinous cord or a broad band. The resulting disturbances of function are stiffness and a certain helplessness of movement, in some cases complete abolition of every sort of motion. Nevertheless there is possibility of resorption of this exudation to a certain degree, and, in consequence, a gradual amendment of the disturbances of mobility.

Ibidem.—Dr Ernst Schotten gives details of a case of extra pericardial emphysema. The patient had fallen and was brought unconscious to the hospital. The symptoms and signs in the pericardial region were shortly the following:—Heart movements visible; palpation gives a crepitating feeling, so that suspicion of fractured ribs was aroused, but there was no such thing, and there was no subcutaneous emphysema. Percussion of heart, beginning at the fourth rib, to the right as far as the left border of the sternum, to the left as far as the mammary line, and *sharply defined*, gave, instead of the normal dulness, a strong high-pitched tympanitic sound, which, by quick filliping percussion, changed into a cracked-pot sound. Also below where the stomach tympanites began this sound was sharply marked off. Auscultation gave loud ringing metallic sounds, with a mixture of splashing and cracking (*Quatschen und Knacken*), also of a metallic quality. No friction sounds. No lung abnormalities. No splashing or cooing in stomach. The splashing and cracking were audible about *two feet* from the breast of the patient.

One conclusion only could be formed, that between the heart and wall of the chest a certain amount of air was present, which was shaken by the heart's motions and gave the ringing quality to its sounds, and caused also the peculiar crepitating feel on palpation.

The case eventuated in health, and the exact mode of how the air came to be where it was, as well as from what quarter it had come, could not be settled.

The objective signs of palpation, percussion, and auscultation showed without doubt that in front of the heart, whether *in* the pericardium or *before it*, there was a quantity of air. How could air reach the interior of the heart-bag without a tearing of it, and, besides, as there was no skin wound, a laceration of lung, œsophagus, or stomach?

The progress of the case showed that such a serious lesion had not been present. There followed no fever, no dry or fluid exudation in pericardial sac, no pleural or pulmonary signs. It must therefore be supposed that the air lay in front of the pericardium, between its outer layer and the cellular tissue under the chest wall. There probably had been a laceration of one or more lung vesicles which allowed air to penetrate the mediastinal cellular tissue and gradually work its way forwards until it arrived between the pericardium and chest. This supposition is more feasible than that of the rupture of a sound pericardium, and consists fully with the quite reactionless progress of the case and its freedom from pericarditis and functional heart disturbances.

Ibidem, No. 52, 1886.—A simple instrument for the diagnostic measurement of the knee phenomenon is described. It consists essentially of a quadrant, hollowed out so that its surface may correspond to a circle with a radius of 75 centimetres. A slip of paper can be fixed on this curve and held in place by brass clamp; to the patient's leg hanging at right angles over a table, a wooden rod, to the end of which an elastic brush pencil is affixed, is fastened by means of leather straps bearing a ring, through which the rod passes; the one strap is at the level of the condylus externus tibiæ, the other at the malleolus externus. The rod is so focussed that beginning with the zero of the quadrant it will, with the radius of 75 centimetres, always touch the surface of the circle; the pencil is, by means of a pipette, moistened with a solution of eosin or other dye, and many trials can be made with the same slip of paper, as the colour can easily be wiped off.

Sixty patients were measured in this way, the object being—firstly, to fix the *normal size* of the knee phenomenon. It was found that the strength of stroke given to the patellar tendon did not cause a proportional increase or decrease of the excursion of the foot. It was settled by the experiments that the physiological latitude of this excursion varied from 15 to 30 degrees. The pencil does not describe a straight line on the surface of the cylinder, but an elliptical curve. This is thought to be brought about by a combined movement of extension, abduction, and adduction, so that other muscles all innervated from the plexus cruralis participate in the causation of the phenomenon.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

The Cutaneous Manifestations of Late Hereditary Syphilis.—Attention has been drawn in recent times to those manifestations of an inherited specific taint which appears in youth or early adult life; and Fournier has added materially to our information on this subject. He has found, out of 212 cases, no fewer than 56 of this variety, and believes that such are far more common than is usually believed. They occur from the age of 4 to 21. He excludes later possible examples, since acquired syphilis may come in as a disturbing factor in diagnosis. No preference can be positively stated for any period within these limits. In clinical characters they are all tertiary — they are tubercular syphilides or gummata. As such they present themselves either as dry or ulcerating lesions. Such late hereditary syphilides are little if at all different from those arising from the acquired disease. While these may occur anywhere, they show special predilection for the face and the leg. On the leg these lesions occupy nearly always—a very remarkable circumstance—the anterior aspect. Again, on the face the nose is most frequently attacked. In 28 cases where the face was affected, the nose was involved in 18, and severely involved. The lesions are without symptoms. Everything is in the objective characters. There is a strange absence of functional disturbances, of local or general reaction, and in particular of pain. This explains a fact in practice, that patients affected with these lesions do not present themselves before us till mutilations and destruction of tissue have occurred. The absence of pain and other discomfort seems to them the guarantee of benignity. The indolence of the lesions themselves is a source of danger. After a protracted course the termination, in the dry form, which is rare, may be by absorption. More frequently, if treatment intervenes sufficiently early to prevent ulceration, resolution takes place. If not, cicatrization ensues, at the expense of the parts affected; for these are lesions pre-eminently disorganizing, destructive. Now here diagnosis is everything. Either these lesions will be recognised for what they are, and then they will be easily and promptly cured by the only treatment appropriate to them; or they are ignored entirely as syphilitic, referred to some other cause, and the result of such an error is plain. The only conditions with which they can be confounded are the varieties of lupus, scrofulous affections; and when a mistake occurs, it is always that they have been regarded as lupus. The diagnosis is in many cases difficult for the most experienced. 1. Distinction between a tubercular syphilide and a lupus, both in this dry form: (*a.*) *Colour.*—The syphilide, a dull red, a deep reddish brown; lupus, a clearer red, at times semi-transparent, like some kinds of barley sugar. (*b.*) *Consistence.*—The syphilide, firm under the finger, hard to the touch—it does not admit of being flattened; the lupus nodule seems less full, softer—it sinks down under the finger. 2. The ulcerative forms: (*a.*) *Colour of Areola.*—In the syphilide, a dull red, like old dried ham; in the scrofulide, a clearer red, sometimes a red tinged with blue—this latter, though rare, when it does occur is striking and almost characteristic; (*b.*) *Crusts.*—These in the syphilide are more compact and harder than in the scrofulide. They are often stratified, seldom so in lupus. They are deeper in colour, sometimes nearly black, or greenish brown, like some antique bronzes, in the syphilide. None of these signs are, however, absolute; they are relative only, and the same may be said of the margins and base of the ulcers. But there are other modes of arriving at a diagnosis. 1. *Characters of the unhealthy evolution.* —Lupus is essentially slow, syphilis comparatively rapid. Lupus destroys by molecules, syphilis by large pieces. Lupus confines itself to one situation, for years it may be; syphilis is more or less rapidly migratory. 2. *Indications pointing to other contemporary accidents.*—Of such examples are to be found in the coexistence of an exostosis, evidence of an interstitial keratitis, or, on the other hand, scrofulous glands or white swelling of the knee. 3. *Unhealthy antecedents,* whether of scrofula or of hereditary syphilis. 4. *Examination of the person of the patient.*—Entire absence of any signs of scrofula tends to exclude it, and favours the presumption of syphilis. Age does not come in here to any appreciable extent, since lupus and these late manifestations of inherited syphilis appear about the same period of life. 5. *Inquiry as to older and collateral members of the family.*—If in the older or other children of the same family proofs of syphilis are found, the specific origin of the lesion under discussion is nearly certain. If after all we are in doubt, the therapeutic test is still available. Iodide of potass does no harm in lupus, and even mercury, prudently and temporarily administered, is not injurious. At all hazards a specific treatment should be instituted in doubtful cases.—*Annales de dermatologie et de syphiligraphie,* No. 4, 1886.

LICHEN RUBER ACUMINATUS.—An interesting discussion has taken place as to the existence or not of a form of lichen which will answer to the type of the disease known as lichen ruber by Hebra. Unna has recently recorded a series of cases which he claims to correspond with the acuminate lichen ruber of Hebra; and in a criticism of Unna's paper Brocq maintains that, while it is possible such a form may occur in Germany, it is unknown in France. It is admitted on all hands that among the flat-topped papules of lichen planus there may be discovered in certain cases pointed ones, with a small scale on their summit; but the question at issue is, whether there exists a form of lichen in which all the papules are acuminate. According to Unna, the papules are minute, of the size of a grain of millet or of mustard-seed, conical, pointed, and bearing at their apex a small scale, which corresponds to the orifice of the hair follicle. They itch much. At the commencement they appear as red scaly points, widely separated from each other. They increase in number, and when in course of the disease the skin which divides them becomes red, swollen, and thickened, they run together, and give rise to extensive patches of a bluish-red colour, slightly scaly, and extremely itchy. The individual papules are now swallowed up in the general engorgement of the papillary body, and are no longer perceptible to sight or touch. On the trunk one finds only a simple pityriasis, on the palms and soles flattened transparent papules, on the tongue irritable erosions. It is the rule that lichen acuminatus has an acute course: it frequently supervenes after profuse perspirations. Unna adds that, untreated, in a few weeks it assumes a chronic phase, the nails begin to be affected, the hair falls off, the patient emaciates, and in course of some years dies of marasmus or of phthisis pulmonaris. Arsenic, internally or subcutaneously, cures it in some weeks or months; but Unna claims as the most efficacious and agreeable method the inunction of a salve containing carbolic acid and corrosive sublimate. This cures recent cases in a week, in a fortnight such as have lasted three or four weeks, in three or four weeks such as have lasted months and years. The effect is certain; the patient experiences no pain: the itchiness, on the contrary, becomes less even on the first day, and soon disappears. After the cure a degree of pigmentation corresponding to the duration of the eruption remains. The difficulty in diagnosis is between such cases and pityriasis rubra, and unless the whole course could be watched the final condition of the skin is very similar. There is a discrepancy, too, between the description of Unna and Hebra, inasmuch as the latter insisted on the chronic course of the disease. Brocq regards Unna's cases as corresponding to what are called in France pityriasis rubra pilaris; and Tilbury Fox in this country drew attention to a sequela of pityriasis rubra, which he did not regard as always fatal or incurable, and which he called pityriasis pilaris. Cases exactly like those which Unna describes individually are met with here, but would be classed as eczema papulosum, as eczema artificiale, or as exfoliative dermatitis, and not as lichen ruber acuminatus. He also mentions the occasional occurrence of bullæ in his cases, a feature which would ally those much more closely with exfoliative dermatitis.—*Annales de dermatologie et de syphiligraphie*, August and October 1886.

LICHEN RUBER IN NORWAY.—These varying opinions have stirred up C. Boeck to state his experience in Christiania. Lichen ruber is rare in Norway; in eleven years he has only met with seven cases. None presented the pure acuminate form. Four were lichen planus, as we understand it. In one among the flat-topped papules were found some with a more rounded summit, which Unna has named lichen obtusus, and seeks to make out a variety. In two there were found, besides the flat papules, pin-headed sized, very prominent acuminate red ones, which corresponded in situation to a hair follicle. Indeed, a hair was frequently seen to project from the papule, and to have a minute scale attached to it all round. Boeck, however, does not agree with Brocq that the acuminate lichen of Hebra is the pityriasis pilaris of the French. In pityriasis pilaris (which he admits as a distinct disease, but which seems, according to him, to resemble closely our lichen pilaris) he says the distinctive mark of lichen ruber acuminatus is awanting. This is the smooth and frequently glancing surface of the small conical lichen papule. In one of Boeck's cases Unna's salve was tried in combination with arsenic, and apparently with benefit.—*Monatshefte für praktische Dermatologie,* No. 10, 1886.

FRECKLES.—Halkins believes that in carbolic acid we possess a certain cure for freckles. The skin, first washed and dried, is stretched with two fingers of the left hand, and each freckle is carefully touched with a drop of pure carbolic acid, which is allowed to dry on the skin. Under its action the part becomes white and burns for a few minutes. In from eight to ten days the cauterized scale falls off, and the spot, at first a rose red, soon assumes its natural colour.—*Monatshefte für praktische Dermatologie,* No. 9, 1886.

OCCASIONAL PERISCOPE ON CLIMATE AND DISEASES OF THE TROPICS.

By ROBERT W. FELKIN, M.D., Lecturer on Diseases of the Tropics and Climatology, Edinburgh.

DR KARTULIS of Alexandria states that, being stimulated by the researches of Dr Koch in cholera, he recommenced the investigation of dysentery, and has been rewarded by finding in 150 typical cases an amœba, which he believes to be the cause of the malady. The amœba never occurs in ordinary diarrhœa. In thirty post-mortem examinations which he made, he was not only able to demonstrate the presence of the amœba in the contents of the intestines, but also in the intestinal walls themselves. The discharges must be perfectly fresh when examined for the amœba. The power required should be equal to Zeiss, oc. 3, $\frac{1}{12}$ oil immersion lens, tube fully drawn out, and very careful focussing is necessary, because the amœbæ have very transparent bodies, and are therefore liable to escape notice. The size of these amœbæ varies from 0·012 to 0·030 micro-millimetres. When examined by the above-mentioned power their plasma substance, their nucleus, and small cavities can be distinguished. The plasma consists of a fluid mucoid substance—myxo-plasma, containing many small refractile bodies. The nucleus is homogeneous; it is situated in the centre of the amœba, and generally presents a faintly shining appearance. Sometimes a nucleus contains from one to three granules, and in some rare cases two nuclei are found. The cavities are present in a varying number, but there are never more than ten seen in one amœba. It is impossible to stain them. The amœbæ are generally circular in form, but they may change their shape ten times in a minute. In some of them can be distinguished nutrient plasma, granular plasma, and moving plasma. If an amœba which has given off a process remains quiescent for a short time granular plasma may be seen streaming into the process, and the same thing is seen if a second process is formed, until the amœba divides or dies. In examining the intestines of patients who have died from acute or chronic dysentery, an immense number of amœbæ are to be found in the submucous coat, and more rarely under the mucous membrane. The amœbæ have been cultivated, but up to the present time Dr Kartulis has not been able to produce the disease in the lower animals by inoculation. He says that care must be taken to have the discharge which is examined unadulterated, and he found that in those cases in which much hæmorrhage had taken place very few living amœbæ were to be discovered. He considers that he has fully proved that tropical dysentery is caused by this amœba, but he has failed to prove how it gains entrance into the body. The treatment which he advocates, and from which he has obtained brilliant results, is the injection of solutions of nitrate of silver, quinine, or boracic acid. Drawings of the amœba may be seen in the *Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin*, 105 Band, Zehnte Folge, 5te Bandes; drittes Heft. Sept. 1, 1886.

The theories as to the origin of malaria are receiving constant additions, and each new observer is as confident as his predecessors that he has discovered the origin of the malarial poison. Dr Karl Schwalbe of Magdeburg has published a very interesting paper "On the Experimental Production of Melanæmia and Melanoma by Carbondisulphide and Carbonoxisulphide, with some Remarks on the Malaria Poison." From his numerous experiments he has found that he can inject a 5, 10, or 20 per cent. solution of carbondisulphide into a rabbit in doses of 1 ccm. three and four times a day. After ten gramms of carbondisulphide have been introduced into a rabbit he finds that, although up to that point the rabbit has no pain, eats well, and bears young, it loses weight, and its mucous membranes are pale. On examining the blood drawn from a rabbit so treated, it is found to be very pale, and when microscopically examined, although a few red blood corpuscles are normal, the majority are reduced to mere shadows, and in one or more in each field pigment granules may be seen. The white blood corpuscles are found to be less numerous than usual; they are often very pale, and sometimes full of black pigment. The total quantity of blood is greatly lessened. Neither albumen nor sugar are found in the urine. On post-mortem examination of a rabbit killed after having been treated as mentioned above, the spleen was always found to be much darker in colour than usual, and in many cases it was much enlarged and gorged with blood. A considerable quantity of black, brown, and yellow pigment was found in the spleen. Venous blood taken from the spleen was discovered to contain numerous pigment cells; the black was especially noticeable in large quantities, and resisted all the usual reagents in a very remarkable way. Pigment was also found in the lungs, kidneys, and marrow, also in the brain, pia mater, and spinal cord. The brain was softened in many places. Like experiments were performed upon a rabbit from which the spleen had been previously removed. In this case the animal gained in weight, but on a post-mortem examination being made the blood was found to be pale, the white blood corpuscles very few in number, and pigment was seen in the red blood corpuscles, liver, kidneys, lungs, heart, brain, and spinal cord, but not in the marrow. The thyroid body, which was enlarged, contained yellow, red, and black pigment. This experiment proves that although the spleen forms and stores up more pigment than any other organ in the rabbit, yet its removal does not prevent the production of new pigment in the body. Similar experiments with the same results were made with carbonoxisulphide. From these experiments Dr Schwalbe believes himself justified in stating that the introduction of carbonoxisulphide will induce alterations in the body of a rabbit which resemble those induced by the action of the malarial poison in man. It is well known, he says, that the malarial poison exerts the following action on the blood:—(*a.*) The solids are diminished in quantity; (*b.*) there is an increase in the volume of red blood corpuscles; (*c.*) black pigment makes its appearance in the red blood corpuscles; (*d.*) the white blood corpuscles are much more diminished in number than the red. In cases where death occurs to a man who has not suffered from malarial fever for weeks or even months quantities of pigment are found in the spleen, liver, and marrow. Carbonoxisulphide Dr Schwalbe believes to be the cause of malarial fever, for it may be introduced into the body either in solution or by inhalation for some time with impunity, but at length, should its introduction be continued, it disturbs nutrition to such an extent that an incurable condition is induced. The specific weight of the gas is 2·1046; its smell is peculiar and characteristic, it decomposes easily in water, in the sunlight, especially in the presence of ammonia. In 1885 Dr Schwalbe proved by chemical examination that carbonoxisulphide was present in a dried-up marsh at Herrenkrug. He thinks that the gas is decomposed during the day by the sun, and that during the night it is inhaled by men, and thus induces malaria. In combating the germ theory of the origin of malaria he lays great weight upon the fact that no observer has yet obtained germs by night, but only during the day. He considers that, on account of the weight of the gas, a slight elevation would prevent its exerting its power, but he thinks that such elevation would be powerless against germs, supposing them to be the origin of malaria, as he considers that they would ascend to a great altitude. The upholders of the germ theory say that a gas cannot be the cause of malaria, because of the long-continued action of the poison upon the system. Dr Schwalbe meets this objection by saying that snake poison and carbonoxisulphide may also affect a man for months and years after having been once introduced into his system. Dr Schwalbe also denies that malaria alone causes the three well-known stages of an attack of intermittent fever. He knows of a case of real gout, he says, in which the typical attacks began suddenly in the night with chill, heat, and sweating, during the day the patient being almost free from fever, which, however, returned again and again on several occasions, quinine always preventing their recurrence.—*Archiv für Pathologische Anatomie, etc.*, Sept. 1, 1886.

SURGICAL PERISCOPE.

UNUSUAL SITE FOR HYDATID CYST; AN ADDITION TO THE RECOGNISED VARIETIES OF INTRASCROTAL DISEASE.—The patient, A. T., æt. 25, a native of Lancashire, was brought out to Brisbane by his parents in 1864, when he was three years of age. He describes the Gympie water as being very bad, and obtained from waterholes sunk in the ground. In 1878 he first noticed a swelling in the right scrotal region, which began at the lower part and enlarged from below upwards. The swelling at the beginning of 1884 was nearly the size of "two shut fists," and immediately prior to this had enlarged very rapidly. It was twice tapped, and he found his way to the Sydney Hospital, and was admitted 16th July, 1886. There was an intrascrotal tumour about the size of a large emu egg on the right side. It was smooth in outline, and in its general contour nearly oval. The tumour was tense and dull on percussion, but gave to the fingers on palpation the sensation of fluid within. There was no impulse on coughing, and it was irreducible. The position of the testicle, at its posterior part, was made out by the presence of testicular sensation. The cord could not be clearly defined at the upper portion of the swelling. Light was transmitted by the ordinary manner of procedure, and finally, as was mentioned previously, the history had been that of an eight years' growth, painless except from its mere weight. The House Surgeon (Dr Westrum), on 17th July, the day after admission, tapped him with a fine exploring trocar and canula, and evacuated about one ounce of "serous-looking fluid," of "pale yellowish tinge." A few days afterwards his temperature rose repeatedly every evening two or three degrees above the normal, being attended with much heat and swelling about the tumour. I now determined (30th July) to empty its contents, and for this purpose used a full-sized trocar and canula, giving exit to about six ounces of purulent-looking fluid. After this a good deal of pus daily drained away, and feeling satisfied that there was something demanding freer outlet, I proposed (10th August) to open up the scrotum antiseptically on the following morning, insert a full-sized drainage tube, and then stitch the cut edges of the tunica vaginalis and integument together. In the afternoon of the same day, however, an hydatid sac partly forced its way, and was partly extracted, through the opening left from the tapping ten days previously. It presented the usual and unmistakable characters of an hydatid sac, being grayish in colour, translucent and elastic, and in its collapsed condition was of such a size as would about fill an egg-cup. From this time the swelling gradually subsided, the sinus ceased to discharge, the scrotum returned to its normal condition, and the patient was subsequently discharged, cured.—(Philip E. Musket, Honorary Surgeon to the Sydney Hospital. Read before the N.S.W. Branch of the B.M.A., November 1886).

An interesting case of excision of the left half of the larynx for epithelioma by Mr Lennox Browne is recorded in the *Medical Press and Circular* for Dec. 22, 1886. The patient was a man, æt. 61, who had experienced difficulty in breathing for eighteen months. A preliminary tracheotomy was performed, and Hahn's compressed sponge tampon canula introduced. The left half of the thyroid and cricoid cartilages and the whole of the left arytenoid with the corresponding vocal cord were then removed. The raspatory was used as close as possible to the cartilages, so that the perichondrium was removed almost intact, and the external soft parts but little disturbed. The superior cornu of the thyroid cartilage was not taken away. Only two arterial twigs required torsion. Oozing was stopped by the galvano-cautery, which was also employed for the purpose of destroying any fragment of diseased tissue that might not have been separated. Although with the laryngoscope the disease had appeared to involve principally the left vocal cord, it was found that it had really originated in the ventricle. The tracheotomy tube was removed at the end of seventy-two hours. In a note, we learn that on Christmas-day he was able to have turkey and champagne, and on the 29th Dec. (14 days after operation) his pulse and temperature were normal.

At the late Medical Congress held at Wiesbaden Dr Bloebaum, of Coblenz, read a paper advocating the use of the galvano-cautery in the treatment of diphtheria. He found in the cases he treated (among them his sixteen-year old daughter), that the application of the red-hot platinum wire, even without the use of cocaine, caused very little pain, that the cauterized sores were totally sterilized, the fever disappeared, the membranes did not reform, and no local inflammation followed the burning. These results he obtained without the aid of antiseptic or antithermic medicines, and so confident is he of the efficacy of this new mode of treating diphtheria (of which it is said V. Nussbaum and other Continental authorities have expressed a favourable opinion), that he considers that "the number of cases of deaths must be reduced to a minimum if the patients are treated in the proper manner without loss of time by the platinum loop." At the end of the paper are figured a speculum and cautery designed by the author.

Part Fifth.

MEDICAL NEWS.

We have received from the publisher, Mr D. H. Menzies of Glasgow, a most admirable portrait of the late Sir Robert Christison. The artist had not the advantage of seeing the living man, but has worked only from a photograph, which was an exceedingly good one, and has given a striking likeness of Sir Robert Christison when in the prime of his earlier old age, before he had any of his serious later illnesses, and before he had so far concealed his grave, stern features with a full beard. Mr Menzies's series of portraits of distinguished medical men is becoming both an extensive and a valuable one.

Strophanthus.—Messrs Burroughs, Wellcome, & Co., Chemists, London, have sent us specimens of pods, seeds, and tincture of strophanthus. The pods and seeds are fresh, and in fine condition, and from the well-known reputation of the firm, we may rely on the purity and excellence of the tincture which they have prepared and sent us. It will be gratifying to our readers to know that Messrs Burroughs, Wellcome, and Co. have now an unlimited supply of this valuable drug. It is chiefly used in the form of a *tincture*. They formerly prepared this tincture of the strength of one in eight, but they state that henceforth they have decided " to adopt Prof. Fraser's formula of *one in twenty*, the dose being from one to ten drops." We would specially direct the attention of hospital physicians to the following statement which they have forwarded to us:—"We shall be pleased to distribute among hospitals, *free of cost*, a sample quantity of tincture and tabloids of strophanthus, in any case where we are informed that the attending physicians desire to experiment." For the introduction of this new and most valuable drug into medical practice we are indebted to Professor Fraser of the University of Edinburgh. It is a drug possessed of great potency, and is one of the most valuable which has recently been introduced to the notice of the profession. It is fortunate that so valuable a drug may now be obtained of a definite strength from our retail chemists, and that without any risk of the supply becoming exhausted.

Calvert's Boro-Phenol.—This is a new disinfectant by Mr Calvert, whose name is so well known in connexion with carbolic acid. Boro-phenol contains 50 per cent. of pure carbolic acid combined with borax. It is soluble in water, and is convenient and excellent for disinfecting purposes.

OBITUARY.

JOHN BALFOUR, SURGEON.

DIED at Leven, Fife, on the 13th December, John Balfour, surgeon, Inspector-General of Hospitals, H.M. Indian Service, retired, aged 77. Mr Balfour was the eldest son of the late Rev. Lewis Balfour, D.D., minister of Colinton, and was born in the manse of Sorn, Ayrshire. He was educated at the High School and at the University of Edinburgh. On obtaining his diploma as surgeon from the Royal College of Surgeons, Edinburgh, he was appointed surgeon on board the "General Kydd," one of the old East Indiamen, and for the next five or six years he made annual voyages to the East, *viâ* Madeira, St Helena, and the Cape, at a time when the whole fleet of vessels trading from Britain to the East did not amount, either in number or in tonnage, in one year to a tithe of those now passing daily through the Suez Canal.

Rather more than fifty years ago, Mr Balfour exchanged the naval for the land service of the Hon. East India Company, being shortly afterwards appointed surgeon to the Lieutenant-Governor of the N.-W. Provinces, and subsequently to the civil station of Bareilly, where he remained till he took his furlough in 1848. Cholera was then raging in Britain, and in May 1849 he was asked to take medical charge of the cholera patients in the village of Davidson's Mains by the Parochial Board of Cramond. There, to his amazement, he found cholera of as fatal a character and as severe a type as any ever seen in India.

Shortly after his return to India Mr Balfour was appointed field-surgeon to the army in Burmah. He was at the capture of Rangoon, and remained in Burmah about a year, till after that Burmese war was over. Among the junior medical officers under him in Burmah there were the present Director-General of the Army Medical Department, Sir Alexander Christison, and Sir Joseph Fayrer. On Mr Balfour's return to India he was appointed to the civil station at Delhi, and there he continued till the outbreak of the Mutiny on 11th May 1857. Mr Balfour left his house that morning to pay his hospital visit, without a thought of what was about to happen. Disturbing rumours had reached him of what had occurred at Meerut the previous day, but he had no idea of the nature of the storm that was about to burst, and to the latest day of his life he believed that a determined stand by even one hundred Europeans at the first would have effectually checked the outbreak. As it was, his house was a ruined heap before he saw it again, its contents—everything he then possessed, down to carriage and horses—gone for ever. Mr Balfour and a few others held the flagstaff tower for a whole day, but when night came the brigadier in command told them it was impossible to hold out longer, and that they must escape as they best could. An account of this day's experiences was published in *Fraser's Magazine* for February 1858 by Mr C. T. Le Bas, himself an actor in the events he describes, who also had to flee for his life. Mr Le Bas escaped on horseback to Umballa; he lent Mr Balfour a horse and dogcart, and in it Mr Balfour, his sister-in-law—his wife was, fortunately, at home—another lady and a child, and a gentleman, escaped northwards to Kurnaul, where they remained about a week. Ultimately they all arrived safely at Umballa, except the child, who died by the way. They received much kindness from many of the natives during their flight—a kindness which was never forgotten, and was suitably rewarded when more peaceful times came. At Umballa, Mr Balfour was nominated field-surgeon to the force besieging Delhi, but he was unable to take up the duties, as the mutineers were between him and the force to which he was appointed. He, however, took charge of the Staff and Depot Hospital at Umballa, receiving all the sick from the regiments going down to the siege, and as many of the wounded as could be got up. These comprised nearly 300 cases of gunshot wounds and about 50 amputations, most of them received in a very bad plight, but all successful, though without antiseptics. The Hospital report was published in the *Edinburgh Medical Journal* for October 1858. Mr Balfour's surgery was not, however, confined to wounds received in battle, as before the Mutiny he had a considerable experience in lithotomy, having generally six cases of a morning, with one operating day in the week. He presented a collection of calculi, extracted by himself, to the Museum of the Edinburgh College of Surgeons. After the capture of Delhi, Mr Balfour continued in charge of that district till he was removed to Dinapore, where he remained till he retired from the service in 1863.

In 1866 we had again an epidemic of cholera in this country, and at the request of the Parochial Board of Colinton Mr Balfour established an hospital in the village of Slateford, and took sole charge of all the cases till the cessation of the disease. An account of this outbreak, with a plan of the village, showing the relation between the spread of the disease and the water supply, was published in the *Edinburgh Medical Journal* for February 1867. This outbreak was scarcely over when Mr Balfour was summoned to the town of Leven, in Fife, which, with the neighbouring villages of Buckhaven and Methil Hill, had been attacked with a very severe epidemic of cholera, no fewer than 80 deaths having occurred out of a population of 400 in Methil Hill alone. Here, also, Mr Balfour was able very clearly to trace the disease from person to person, and to show the influence of water supply in spreading the contagion. One of the earliest victims to the cholera in Leven was the local medical man, Dr Kennedy, and at the request of many of the inhabitants Mr Balfour remained to take up his practice. Under Mr Balfour's watchful care the town was thoroughly drained, a pure and abundant water supply introduced, and Leven was made what it now is, one of the healthiest watering-places in Fife.

Mr Balfour was a man of untiring energy. When doing his district work in India he was often out for a fortnight at a time, on camelback or horseback, with no food but some hard biscuit and a few raisins to mark the dinner; and on his escape to Umballa he thought it no great hardship to have to sleep for three months on the floor, or, as a luxury, on a tabletop, without even a sheet to cover him. Essentially a man of deeds, not words, he has left but few records of his work behind him, yet there are some excellent papers of his in the *Indian Annals* and in the *Edinburgh Medical Journal.* Some of these have been already referred to; others were on such subjects as "The Incubation of the Guinea Worm," "The Delhi Sore," and "The Dietary of Prisoners," a subject in which he took much interest, etc.

We cannot more fitly conclude this brief notice of Mr Balfour's life than by quoting a few sentences which were published in the *Lancet* for November 1866:—"It is with much satisfaction that I record the self-imposed services of Dr John Balfour, a retired Indian medical officer, who has nobly taken up his residence in this distressed village (Slateford), and opened an hospital there, as there is no resident medical practitioner. It is by such prompt and self-denying acts as this that the high character of our profession is sustained, and without doubt all professional men must feel gratified by having another instance added to the long list of its noble acts and self-sacrifice."

Mr Balfour is survived by his wife, one son, and one daughter. The loss of his eldest daughter and of his youngest son, a few years ago, and the anxiety attending on the serious illness of his wife, at last broke down a constitution which seemed to have passed unscathed through all the hardships of the Indian Mutiny as well as the strain of more than thirty years of Indian life.

MR WILLIAM BROWN, F.R.C.S.E. & F.R.S.E.

MR WILLIAM BROWN, whose death took place at his residence, 25 Dublin Street, on the 20th ultimo, was born on the 31st of May 1796, having reached the advanced age of ninety-one. He was the only son of William Brown, M.D., F.R.C.S.E., who, before settling as a practitioner in Edinburgh, served first in our Royal Navy, and afterwards under the Russian Government as a physician at Cronstadt and in Siberia. He came to Edinburgh in 1793, and continued to reside there, in the enjoyment of a large practice, till he died in 1818. He was an earnest Christian, an elder in the Tolbooth Parish Church, and it is said of him that "he did not shrink from speaking to his patients about the truths which directed and comforted his own soul."

Mr Brown (the subject of our sketch) studied at the Edinburgh University. From a Christian point of view, college life then was very different from what it is now. In a lecture delivered to medical students a good many years ago, Mr Brown, in recalling these days, says:—"When I began my studies at this University, under Professors who have now all passed from the scene, I felt a weary longing for fellowship with students of the same sentiments with myself, but for long I sought such fellowship in vain. At length, however, I did find a medical student of the same mind as myself, and the mutual happiness resulting from the discovery was great, and, for a very long period, this friendship was as a thread of gold passing down through each successive year of my life. During our attendance at college, on our leaving it, and in all our after life, we felt to each other as brothers. His name was John Mitchell Davidson, and he died at Nottingham in 1844, one of its first physicians, and one of its most respected citizens." The fact that the Edinburgh Medical Students' Christian Association has this year a membership considerably over 200, is a striking illustration of the change which has taken place since then.

In 1817 Mr Brown became a Fellow of the Royal College of Surgeons, Edinburgh, and for several years his name has headed the list as senior Fellow. As a proof of the esteem in which he was held, he was elected President of the College in 1834, which office he held for the usual period of two years. He was for many years a member of the Council, and likewise one of the Examiners.

Mr Brown had a good, but not very extensive practice; he was much beloved and trusted by his patients, and was frequently called in by his friend, the elder Dr Begbie, to consult with him in serious cases. He was Surgeon to the Orphan Hospital for the long period of fifty-two years; and five years ago, when he resigned that appointment, he was elected Hon. Consulting Physician. He took a deep interest in the work of that Institution, and maintained a kindly correspondence with many of the former inmates long after they had left the Hospital. He was likewise for several years a medical officer of both the Royal and New Town Dispensaries, and was always a sympathizing friend and generous helper of the sick and suffering poor.

Mr Brown's contributions to the literature of the profession were few, and principally in pamphlet form. He delivered three or four lectures to medical students, which were afterwards published. These lectures are full of wise and faithful counsel—one of them especially, on "Medical Ethics," is well worthy of being "read, pondered, and inwardly digested," not only by medical students, but also by medical practitioners. He was the author of several brief biographical sketches of medical contemporaries, and also contributed a few papers on medical subjects to the pages of the *Medical Journal*. He has been for a good many years the sole survivor of the founders of the Medico-Chirurgical Society.

Mr Brown took a deep interest in many of the religious and charitable institutions in Edinburgh, but he especially identified himself with the furtherance of the cause of medical missions, which has now become so important an auxiliary to home and foreign missionary work. At the inaugural meeting of the Edinburgh Medical Missionary Society, held in 1841, he was elected a Director, and in 1849, on the death of Dr Beilby, he became the President of the Society, which office he retained till his death. Till within the last two years, he was rarely absent from the monthly meetings of the directors, his last official duty in connexion with the Society being to preside at the annual meeting last November, when he feelingly alluded to his long connexion with the Society, and expressed his unabated interest in its work, and his ever-deepening faith in its principles.

Mr Brown was a devoted adherent of, and, since 1825, an elder in the Presbyterian Church. Previous to the Disruption, he was a member of the Kirk-session of the Tolbooth Parish Church, but in 1843, with his minister, Dr Tweedie, and fellow-elders, he passed over to the Free Church. In politics Mr Brown was a Liberal, but he took little part in political controversy.

Though reticent of words, Mr Brown was a man of deep feeling, of profound religious conviction, and of a singularly amiable and benevolent disposition. He believed in the sacredness of the medical profession; and in the exercise of his high calling, his aim all through his long life was to glorify God. His work on earth is now over, but those who knew him will hold his memory in lasting remembrance.

LAUCHLAN AITKEN, M.D.,

Obiit. 19*th December* 1886.

> "Quis desiderio sit pudor, aut modus,
> Tam cari capitis? Praecipe lugubres
> Cantus, Melpomene, cui liquidam pater
> Vocem cum cithara dedit."

THESE lines of Horace well express the feelings of the writer, to whom the duty has been assigned of contributing a notice of his oldest and dearest college friend.

Lauchlan Aitken was to those who knew him a man of sterling worth and of straightforward, manly character. Born at Gartcows, near Falkirk, he attended the Grammar School of that old burgh town, and even then was spoken of as a boy of talent. At his father's death Mrs Aitken removed to Heidelberg with her family, and there Lauchlan not only acquired a substantial knowledge of classics, but rendered himself familiar with German, which proved of great service in after years.

It is said that a man owes far more to his mother than to his father; and Lauchlan was blessed with a most excellent mother, who brought up her family with wise judiciousness, forming for them a pleasant home circle, and inspiring in them a love and admiration of all that was highest and best. Lauchlan having decided to adopt medicine as a profession, Mrs Aitken returned to Edinburgh in 1861, and her son commenced his studies under the new regulations, which came first into force that year as a result of the Medical Act of 1858. His systematic method of work, derived to some extent from his German training, coupled with a remarkably retentive memory and natural abilities of a high order, enabled him to take a foremost place in nearly every class. He gained medals in anatomy, chemistry, botany, medicine, obstetrics, and medical jurisprudence; and his essay on Parthenogenesis obtained the Gilchrist Prize. After taking his degree of M.B., C.M., with honours, in 1865, he went to Berlin, attracted by Virchow's fame, whose cellular pathology was then the topic of discussion. But, besides spending some months in Berlin, he studied also at Vienna, and finally at Paris.

On his return to this country he was appointed clinical assistant at Brompton, a post which he held for a year, and always expressed himself as having derived much benefit from his residence there. Sir James Simpson now made him the tempting offer of becoming his private assistant, an avenue to fame which others had already successfully traversed. Aitken threw himself with energy into the laborious field which awaited him. Of all his duties the one which pleased him most was when asked to lecture to Simpson's class in the Professor's absence. Here he felt himself at home, and often said that of all branches of his profession he loved best that of teacher. At this time, too, he wrote a paper on the dangers attending the use of tangle tents, which did much good in suggesting caution in opening up the uterus. Another valuable communication, which also appeared in the pages of this Journal, was one on Pelvic Peritonitis and Pelvic Cellulitis, and one on Gliomatous Tumour of the Brain. When his connexion with Simpson had continued for three years, two cases of scarlet fever were attended by him, and he took the disease in a severe form. The kidneys became affected, and the albuminuria persisting, he went to Bournemouth to winter.

Aitken's attention had been directed to gynæcology during his residence with Sir James Simpson, and on his death there were many inducements to attract him to Edinburgh. But his health was still unsatisfactory, and, acting on the advice of Dr Begbie, he took two long sea voyages. He visited Australia, and derived benefit, though not complete relief. He cast about for a place with scope sufficient to settle down in, and Rome was suggested to him as likely to prove advantageous to his albuminuria. The climate certainly suited him, and he gained in health, while he found congenial pursuits in the intervals of practice in the study of archæology and in the cultivation of artistic tastes. His practice steadily increased, and when Dr Grigor of Nairn retired, Aitken had the largest and most select, both among the American and British visitors to and residents in Rome. He returned to this country in summer, and availed himself of every opportunity of increasing his knowledge. He attended very regularly the annual meetings of the British Medical Association, and when possible the Obstetrical Society of Edinburgh, even in recent years taking part in the debates. In 1881 he married Fanny, the elder daughter of the late Sir Thomas Bouch, whose acquaintance he had made some years before in Rome.

Aitken spent some time last autumn in Edinburgh. His albuminuria was practically gone, but his heart was irritable, and he had become wofully thin. He gained in condition a little while here, and his bright spirit struggled bravely against debility, yet it was but too evident that his life hung on a thread. He returned to Rome somewhat later than was his wont, and caught a chill, which induced an attack of bronchitis, and, conscious almost to the last, he died calmly and peacefully, his devoted wife and attached sister by his side. He had previously disposed of his practice to Dr Charles, of Cannes, and he, as well as his friend Dr Erhardt, did all that was possible to alleviate his symptoms.

Aitken was frank and generous, yet had in earlier years a sort of brusque downrightness about him which possibly offended some. This became gradually mellowed down, and was latterly scarcely perceptible. He wrote tersely and with vigour, and strenuously defended the climate and salubrity of Rome, and this from thorough conviction that such was the case, and that in particular the so-called Roman fever was not contracted in the Eternal City, but elsewhere.

A man is said to be known by his companions; his character is also shown by the books he is fond of. Aitken specially admired the works of Oliver Wendell Holmes and of Dr John Brown. Carpenter's *Mental Physiology* also was a work which he had read and re-read. From this it will be inferred that his views were broad; and, indeed, his cardinal principle was throughout life to act to others as in similar circumstances he would have others act to him. His life was thus pure and noble, and his end peace.

DR PATERSON OF HAWICK.

The late Dr Paterson was a son of the late Mr John Paterson of Townfoot, Ecclefechan, and was at his death in the 55th year of his age.

He died on 22nd December, after nearly three years' suffering, from lingual and buccal cancer, borne with great patience—and notwithstanding his own state, he was able to go about and see patients till within a few weeks of the end.

Devoted to field sports, and to all that concerned social and municipal matters in his native place, Dr Paterson did not write in the medical journals, though from his varied experience he had much to tell. Before settling in Hawick, which he did in 1860, he had served in the Crimea, and had seen much interesting experience of life. He was an M.D. Paris, and L.R.C.P. Edin., M.R.C.S. London. He also held the ribbon of the Legion of Honour.

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Part First.

ORIGINAL COMMUNICATIONS.

I.—THE SENILE HEART.

By George W. Balfour, M.D., LL.D., F.R.C.P.E., F.R.S.E.

(*Introductory.*)

The late Sir Robert Christison, in his first report on the emerged risks of the Standard Assurance Company, stated that the statistics he was dealing with seemed to show that but few even of the aged die from natural decay, but "mostly from some specific disease, just like younger persons."[1] And he also said that the term "gradual decay," when used as an explanation of the cause of death of even old people, was "little else than an admission of ignorance."[2] It is consolatory to have such high authority for believing that at the most advanced ages death is not due to age alone, but to disease; because we always personify disease, we feel that we may escape it, we can fight it, and we often overcome it; but age we know to be the "carle dour" to whom we must succumb. Hence a well-founded belief that disease and not age has been the cause of death, even at the most advanced ages hitherto recorded, is fraught with the hope that science, if not luck, may make the patriarchal ages again our own, and that the mantle of Methuselah may fall upon the shoulders of his nineteenth century successors. From Sir Robert's point of view there is no reason to regard this as impossible, it even looms in the distance as largely if but vaguely probable.

But there is another point of view from which the look-out is not quite so hopeful.

Many years ago an old writer recorded the traditional experience of his time in these memorable words: "The days of our years are threescore and ten; and if by reason of more strength they be fourscore years, yet is their strength labour and sorrow; for it is soon cut off and we fly away."[3] The Psalmist does not set up threescore and ten as an age to which all must attain and which none may exceed, but merely puts it down as the average limit of a full and complete life beyond which but few may go, and that only "by reason of more strength," which soon withereth away.

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[1] *Monthly Journal of Medical Sciences*, August 1853, p. 109.

[2] *Op. cit.*, p. 110.

[3] Psalm xc., verse 10.

And to-day the same story is repeated in the prosaic pages of the Registrar-General, with all the emphatic truthfulness of nineteenth century statistics. "Of 100,000 born in this country, it has been ascertained that one-fourth die before they reach their fifth year; and one-half before they have reached their fiftieth year. 1100 will reach their ninetieth. And only two persons out of the 100,000—like the last barks of an innumerable convoy—will reach the advanced and helpless age of one hundred and five."[1] Of the many millions born only isolated exceptions attain great ages, and all are ultimately entombed in the urns and sepulchres of mortality, for "time like an overwhelming flood bears all his sons away."

Tradition and statistics are thus agreed that few of those born attain the age of threescore and ten, and that beyond that age they die off so rapidly that seventy years may be practically regarded as the extreme limit of even a long life.

The life of the human body having thus an end as well as a beginning, it may be identified with development, and all its phases inseparably linked with structural change.[2] We are so much accustomed to associate development with growth merely, that it seems a somewhat startling proposition to connect it also with decay, and but few of us are sufficiently educated to regard the development of the body as ending only with its death.[3] But this conception of the nature of development involves also the idea that as there are developmental phenomena initial in character, so there must also be similar phenomena which are terminal. And this brings with it matter for serious consideration, for with it comes the reflection that terminal phenomena may not always be restricted to that advanced age, to which alone they seem to be appropriate. For just as we may have a precocious development,[4] so we may also have a premature decay. The development of man, in the only true sense of the expression, is a physiological process, dependent upon tissue change and not on years, and it may attain its natural termination long before as well as long after the conventional threescore and ten. To employ the expression "gradual decay" as an indication that death has occurred from age alone may often enough be little else than "an admission of ignorance," but to call terminal phenomena diseases is worse, it is the unconscious revelation of an ignorance which is not admitted.

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[1] The above extract will be found at p. 24 of Smiles' work on *Thrift*. London, John Murray, 1886. It is based on the Life-tables of the Registrar-General; the latest of these makes one-half die before 47. *Vide* Table B., p. vii., *Supplement to Annual Report*, 1885.

[2] "Jede function ist an mechanische Veränderungen der Substanz geknüpft." Virchow, *Vier Reden über Leben und Kranksein*. Berlin, 1863, p. 96.

[3] "Development and life are, strictly speaking, one thing; though we are accustomed to limit the former to the progressive half of life, and to speak of the retrogressive half as decay, considering an imaginary resting point between the two as the adult or perfect state."—Huxley, *British and Foreign Medical Review*, Oct. 1853, p. 305.

[4] In the *British Medical Journal* for 6th February 1886, p. 263, mention is made of a child three years and a half old who looked like a boy of ten or twelve years of age, and in whom puberty commenced at the early age of eighteen months. Many similar cases have been recorded by various authors from Seneca and Pliny downwards. Prematurity of development and precocity of growth are essentially distinct, though there is a close bond of union between them. Thus females not infrequently menstruate prematurely, but precocity of growth in that sex is so rare that Geoffroy Saint-Hilaire has only recorded two cases of combined precocity of growth and prematurity of development

The superficial observer, who fixes his attention upon gradual decay, sees but little of death from age; but he who recognises the existence, the nature, and the importance of terminal phenomena, not only sees many deaths from age, but is often privileged to ward off for long the ultimate and inevitable end. The linking of growth with decay as part of the development of man opens up striking views as to the gradual evolution of terminal phenomena, as well as of the importance of the early recognition of their first beginnings, and of the various modes in which they threaten life. Because in this matter perturbative medicine and heroic measures can do no good, and may do much harm, we must put ourselves in Nature's place and work as Nature works.[1] Here or there we discover some trifling failure, which, like the "little rift within the lute," threatens serious disaster erelong; but appropriate remedies, timely applied, and long persevered with, may enable us to avert this disaster, and by the slow accumulation of petty advantages, to change the commencement of decay into the renewal of strength. In this way we shall more certainly prolong our life, and secure comfort in existence, than by the unguents, the hot baths, and the elixir vitæ, by which our forefathers sought to emolliate the rigidity of age, and to add a

among females. Among males, on the other hand, many such cases have been recorded, and in them premature development of the genital organs is almost invariably associated with precocity of growth. Some of the cases recorded have been very remarkable. Sauvages—*Hist. de l'Acad. de* 1666 à 1669, t. ii., p. 43—has given full particulars of a boy of six who was five feet high and broad in proportion. His growth was so rapid that it could almost be seen; he had a beard, looked like a man of thirty, and had every indication of perfect puberty. He had a full, deep bass voice, and his extraordinary strength fitted him for all country work. At five he could carry any distance three measures of rye weighing 84 pounds; and at six years and a few months he could easily carry on his shoulders burdens weighing 150 pounds. But he did not become a giant as everybody expected; he soon got feeble, deformed, and almost an idiot. *Vide Histoire des Anomalies*, par M. Isidor Geoffroy Saint-Hilaire. Paris, 1832. Vol. i. p. 197, etc.

[1] Our lives are but a bundle of consequences, our present is but the outcome of our past. It is by trifling advantages, momentarily minute and imperceptible, that Nature either worsens or improves the status of our vitality, and it is by securing these trifling advantages and turning them to the good of our patient that vital declension is averted, and chronic ailments remedied when that is possible.—*Vide* Darwin, *Origin of Species*, and Balfour's *Introduction to the Study of Medicine*. A. & C. Black, 1865. P. 237.

fresh stock of vital force to that which was fast wearing away.[1]

We are born with potentialities, not powers; we have no store of energy upon which to draw, which may be wasted, and which must daily diminish. It is well for us that it is so, as we are all so apt to squander our energy in work or play, or to have it wasted for us by disease, that had we only a fixed amount on which to draw, but few of us would live to old age, and not so many as now even to middle life. As it is, all our energy comes from without; we take it in as food in the Potential form, and we transform it into the Kinetic form by means of the oxygen circulating in our blood. Every act of life, every pulse that beats within us, every thought we think, involves this transformation of energy, even though no apparent movement indicates the presence of voluntary life. That we may continue to live the products of this chemical action must be removed, and the used up waste replaced by fresh oxidisable material; and our organism is so constructed that this goes on continuously. The latest definition of life is based upon these facts, for "the continuous adjustment of internal relations to external relations"[2] is obviously but a concise statement of the conditions necessary for the continuous manifestation of living action, and not a definition of life itself. Though it therefore fails the metaphysician, this definition is practically sufficient for the physician, who deals only with the physics involved. And we may also accept its converse, that death is the result of "a failure to balance ordinary external actions by ordinary internal actions."[3] But food and oxygen remaining plentiful, as we may assume they ordinarily do, there seems no reason why assimilation, oxidation, and the genesis of force should not go on for ever, or at least until some cataclysmic change in our environment should disturb the balance of internal and external actions. It is within ourselves, therefore, that we must seek for that change which causes these processes of assimilation, oxidation, and the genesis of force, gradually to fall out of correspondence with the relations between oxygen and food, and the absorption of heat by the environment, which happens in old age, and is the cause of death by natural decay.[4]

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[1] The notion that desiccation is the cause of age, in the obnoxious sense of the word, was widely prevalent in early times. It gave rise to the story of the rejuvenation of Pelias in Medea's cauldron, to which Lord Bacon refers as an instance of the utility of warm bathing in warding off age. Desiccation as a cause of age is also referred to by Galen in his treatises *De Sanitate Tuendo* and *De Marasmo*; and Haller actually states that fishes live long because their bones are soft and cartilaginous.—*Primæ Lineæ*, § 972. All the most modern ideas of preserving vitality by drinking hot water, clothing in woollen garments, and feeding on peptonized aliments, are to be found in Lord Bacon's *Historia Vitæ et Mortis*, Spalding's edition. London, 1858. Vols. ii. and v.

[2] *The Principles of Biology*, by Herbert Spencer. Williams and Norgate, London, 1865. Vol i. p. 80.

[3] Spencer, *op. cit.*, p. 89.

[4] Spencer, *op. cit.*, p. 88.

In days gone by, the hypothesis of a gradual decrease of vital force was supposed to explain the enigma of gradual decay.[1] But vital force is but another name for the sum of all the vital actions of the frame, and to point out that these are decreasing, is indeed to indicate that the organism is dying, but is no explanation of why it dies. Failure in the genesis of force is only an indication of failure in oxidisation or assimilation.

So too impoverishment of the blood, which has been regarded as the cause of the gradual failure in the aged,[2] is itself due to imperfect assimilation, and leads to imperfect oxidation and failure in the genesis of force. Imperfect assimilation is, doubtless, one of the most important links in the chain of causes which lead to the general decay of the bodily frame. The difficulty is to say where this chain begins, for as all the functions of the body commence simultaneously, and aid in the development of each other, so there is not one of them which can be called primary, upon which, when it fails, may be laid the blame of the decay of the others.[3]

The more, indeed, we investigate the phenomena of decay, the more clearly do we see that it is the necessary and ultimate result of development; and though it may not be possible to put a finger upon any special function, or structure, and to say here decay commences, yet erelong we can positively say this is the line along which decay is marching, and here is the structure in which we can earliest detect the withering effects of age.

From our earliest days the growth of our frame is accompanied by a gradual condensation of our tissues, till the gelatinous pulp of the primitive embryo is converted into the withered old man. Every tissue partakes of this change; the skin becomes dry, flaccid, and wrinkled; the bones are denser and more brittle; the muscles participate in the condensation incident to the cellular tissue, which enters so largely into their composition; the muscular fibres themselves are more rigid, diminished in bulk, and impaired in contractility, so that they are less readily and less powerfully excited by stimuli.[4] Hence the shrunk shanks, tottering gait, and withered aspect of the aged man, which have crystallized into the figure of the fabled Tithonus as the classic representative of protracted age.[5] It is only in fable, however, that Tithonus suffers from the burden of undying age; in real life his frailties promote his euthanasia. Worn with his weary tramp through life, no longer able even to totter about, Tithonus at last lays himself down to rest; partly from the loss of the stimulating effect of the little exercise he was able to take, and partly from a similar cause to that which has occasioned the wasting of his skeletal muscles, his powers of assimilation give way; his blood becomes diminished in quantity, and defective in quality; the brain centres for relative and organic life get badly nourished; the genesis of force becomes more and more imperfect; slight wandering delirium sets in; and death from asthenia speedily follows. Scenes anticipatory of the future, more often memorial of the past, flit like dreams through his failing consciousness, and the weary mortal occasionally dismisses himself with some remark bearing on his former work, like that legal dignitary who, raising himself from his couch, and saying with all his wonted solemnity, "Gentlemen of the jury," fell back and expired; or like the great schoolmaster Adam, from whom the gathering glooms of death drew the pathetic and appropriate farewell, "It grows dark, boys, you may go."

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[1] *La gêne de l'influence vital s'accroît sans cesse*, Cabanis. "That considerable differences exist in the stock of vitality originally imparted to the frame in different individuals cannot be doubted, some being destined to a shorter, and others to a longer term of existence."—Roget, article "Age," in the *Cyclopedia of Practical Medicine, etc.*

[2] *Vide* articles on "Age," in the *Cyclopædia of Anatomy and Physiology*, by Symonds, p. 82, and in the *Cyclopædia of Practical Medicine*, by Roget, p. 39.

[3] Roget, *loc. cit.*, and Whytt, *On Vital Motions*. Edinburgh, 1751. P. 270.

[4] Roget, *op. cit.*, p. 40.

[5] His wife Aurora obtained from Jupiter the gift of immortality for him, but forgot to ask for perpetual youth, hence Horace says, "Longa Tithonum minuit senectus," Lib. II., carmen xvi. l. 30.

"The great difference," says Bichat, "between death from old age and death from a sudden seizure, is that in the former death commences at the periphery, and terminates at the heart; the empire of death begins at the circumference and ends at the centre. While in the latter death commences at the heart, and spreads over the body generally; death begins at the centre of vitality, and gradually extends to its outmost bounds."[1] It is impossible to imagine any mode of dying to which Bichat's description of death from age could be more applicable than it is to that just described. It is the typical mode of dying from gradual decay. The Tithonus described is no myth, but a sketch from real life, which must be familiar to many.[2] The mode of dying is one not to be seen every day, but one which occasionally occurs, perhaps, never before seventy, usually at a much more advanced period of life; and yet even at the most advanced ages men may die from accident or disease, and not from decay. Nevertheless, the phase of development that leads to decay is well deserving of consideration, because it is universal. After middle life it intensifies the dangers of all acute diseases. All the chronic ailments of advanced life group themselves around it, and by accentuating latent structural defects, either hereditary or acquired, it often causes those to die from age who have scarcely begun to think themselves old. Moreover, though we can never hope to cope with the ravages of decay, we may often stave off its results. To recur to Bichat's simile, though we cannot prevent the sapping of the outworks, we can reinforce the citadel, and postpone the ultimate surrender.

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[1] *Recherches physiologique sur la vie et la mort.* Paris, 1805. P. 151.

[2] A very admirable description of death from age is to be found in the 12th chapter of Ecclesiastes. The revisers have done their best to spoil it by translating "desire" the "caper berry!"

Tithonus, the aged, at last succumbs, as we have seen, to failure of the genesis of force. He dies from asthenia, and this has been led up to by failure of oxidation, following failure of assimilation, originally induced by structural changes in the circulatory system. We ought to be able to trace the changes to which the alterations in the capillaries and arteries are due, at least one step beyond the vessels themselves. In the present state of our knowledge this is impossible, and it is doubtful whether any important advantage would be gained if we could. It is something, however, to have a pretty general consensus of opinion, that the arterial system is that upon which the finger of decay is earliest laid,[1] as by watching the development of this system we are timeously warned, and are able to withstand the beginnings of evil without waiting for its full evolution, which would be to permit it to get beyond control. We cannot hope in this way to provide an *Agerasia*, nor even to restore the patriarchal ages, but assuredly we can diminish the number and the intensity of those side issues by which our lives are so often brought to a premature termination. We can greatly diminish human suffering, and we shall often be able to postpone the inevitable end.

In early life, the characteristics of the systemic circulation are, that the amplitude (diameter) of the large arteries is great in comparison to the size of the heart and also to the length of the body. Hence there is a low blood pressure and a rapid pulse rate. The large amount of water in the tissues, the abundant supply of nutriment, and the low blood pressure, coupled with the shorter time in which the whole circuit of the blood system is traversed,[2] all favour the diffusion of the blood plasma and the rapid growth of the body, while under the influence of the gradually rising blood pressure the blood finds its way into an ever increasing number of new channels. These conditions prevail during early life, but are most marked during the first year. During early life the whole body grows in every part, but the growth of the arteries in calibre does not keep pace either with the growth of the body in length, or with the growth of the heart in amplitude and strength; the result naturally is a gradual rise in the blood pressure and slowing of the pulse rate as growth and age increase, until in early manhood the blood pressure reaches its highest norm. At this period the whole organism is full of life and vigour, and is at its best in respect of its capacity for bodily or mental exertion.[1] But development progresses, the arterial coats slowly undergo a change of structure by which their elasticity is lost, and they gradually become converted into more or less approximately rigid tubes.[2] The effect of this loss of resilience is, that while the arterial coats yield as formerly to the advancing blood wave, they yield more slowly, and they do not recover themselves, so that the lumen of the arteries undergoes a gradual dilatation. The heart at the same time begins to fail, senile atrophy commences, and in the midst of our fullest life death himself lays his finger upon our most vital organ. From the combination of both of these causes—failure of the force pump on the one hand, dilatation of the arteries on the other—there is a tendency to lowering of the blood pressure; and to this failure of the blood pressure has been ascribed that obsolescence of the capillaries so evident in the dry and wrinkled skin, the gray hair, and the cessation of the sexual functions, as well as on the anatomical investigation of the organs themselves.[1] But the result of this withering of the capillaries is to increase the peripheral resistance to the onward flow of the blood, and thus to raise the blood pressure within the arteries, so that notwithstanding the dilatation of these vessels, the blood pressure in age is always greater than it is in early youth. This view of Beneke's is not, however, quite consistent with the physical facts; circumstances being alike, the increase in the arterial capacity would undoubtedly lower the blood pressure within them; but the circumstances of age are not exactly those of youth. In youth the relatively great calibre of the arteries has no ill effect on the circulation, because though the blood pressure is not so great as it afterwards becomes, it is perfectly sufficient to keep up a steady and continuous flow into the capillaries. In age, however, the case is different, the loss of arterial elasticity, while it throws a greater strain upon the heart itself, makes the outflow into the capillaries approximately intermittent, and naturally lowers the blood pressure within the capillary area, though it still remains high within the arteries themselves.[2] The cessation of active growth renders unnecessary a network of capillaries so large as hitherto, and the fall of the blood pressure within them permits many of them to obsolesce. The result, therefore, is the same, though the steps by which it is reached are not exactly as Beneke has put it. By the time the heart has succeeded in permanently dilating the inelastic arteries, and has restored to them their former relative magnitude, the increase of the peripheral resistance, due to the withering of the capillaries, is sufficient to prevent for a time any material lowering of the blood pressure from this cause. By-and-by, however, this is gradually brought about by failure of the genesis of force, due to failure of assimilation arising from withering of the capillaries in the skeletal muscles, as well as in all the glands of the body (*vide* p. 774).

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[1] *Vide* articles on "Age," in the *Cyclopædia of Practical Medicine*, p. 38, and in the *Cyclopædia of Anatomy and Physiology*, p. 77. *Vide* also Gimbert, "Mémoire sur la structure et sur la texture des artères," *Journal de l'Anatomie*, vol. ii. p. 648. Valerie Schiele-Wiegandt says, "In bezug auf das Alter ergiebt sich folgendes Gesetz Sowohl by Männeru als auch by Frauen nehmen im Grossen und Ganzen, entsprechend den höheren altersperioden, in allen arterien umfang und dicke, respective media und intima, allämhlich steigend zu."—*Virchow's Archiv*, Bd. lxxxii. s. 36; and Roy has found that sometimes before, and certainly always after middle life, the arteries have begun to lose their elasticity, *Journal of Physiology*, vol. iii. p. 125, etc.

[2] Twelve seconds as against twenty-two in the adult, *vide* Foster's *Physiology*, 1883, p. 685.

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[1] *Vide Die Altersdisposition*, by Dr F. W. Beneke, Marburg, 1879, pp. 7, 12, 14, and 18. About this time two events, the access of puberty and the cessation of growth, have a most important influence in the story of development. Beneke refers the access of puberty to the cessation of growth. The capillary system, during the second stage of life (7–15), ceases to grow as heretofore; the brain and large glands have attained nearly their full development, and the blood pressure, still rising in the whole arterial and capillary system, finds its outlet in the development of the sexual organs, the glands of the skin and growth of the hair always associated with maturity, *op. cit.*, p. 14. Here the physics of development seem quite sufficient. The difficulty is to account for the cessation of growth in any part of the body. Geoffroy St Hilaire (*op. cit.*, vol. i.) has some very pertinent and interesting remarks on this subject. He points out that dwarfs are imperfect individuals, usually impotent, whose growth and development have both been arrested, and that as puberty alone terminates the growth of man, dwarfs may begin to grow at any time, even up to old age, and that he has seen this in several cases (p. 190, note). Giants are those in whom the growth, instead of being arrested by the development of the sexual organs, has continued, because these are slowly and incompletely developed. Giants are mostly impotent, always feeble, feminine in aspect, and usually very short-lived (p. 192). In precocious children, the rapid growth being early directed to the sexual organs, the individual ceases to grow; from a gigantic child he may become, if he lives, a man of but moderate bulk (p. 192). So it happens that a child with very active nutrition may become either an imperfectly developed giant, or an early developed (precocious) youth of moderate bulk (pp. 193, 194). These are merely given as facts, and are not attempted to be accounted for. St Hilaire also points out that there are various races of men famous for their bulk and stature, and others as remarkable for their diminutive size, and that though food and other accidents of environment have an acknowledged influence in promoting growth, yet that those races of varying size unquestionably owe more to heredity (however acquired) than they do to abundance of food and a comfortable, easy life, or the reverse (pp. 240, 241). It is the physics of growth alone that concern us; so long as we know what these are, it suffices for our purpose, but as these physics largely depend upon the progress and the cessation of growth, it would be a matter of great interest and importance if we could discover why growth ever ceases. Herbert Spencer says that growth is arrested "because the excess of absorbed over expended nutriment must, other things equal, become less as the size of the animal becomes greater."—*Principles of Biology*, vol. i. p. 122. If this were the true reason, we should all be more nearly the same bulk than we are. Moreover, this may be a very good reason for ceasing to live when we reach a certain bulk, and in so far is applicable to giants, and explanatory of their short lives, but it is no reason why we cease to grow before we reach that extreme bulk, and is also no explanation of the very peculiar relations between growth and sexual development.

[2] "One common feature of old age is the conversion by such a 'change"—the replacement of a structured matrix by amorphous material—"of the supple, elastic arteries into rigid tubes."—Foster, *op. cit.*, p. 690, *vide* also references at p. 775.

It is along the pathway of the arterial system, therefore, that death and development march hand in hand, and there is no difficulty in tracing their footsteps. Beneke says that the framework of the body is built to last from 90 to 100 years.[3] In exceptionally favourable circumstances this no doubt holds good, and a distinct recognition of the line along which decay must march will help us early to recognise its approach, and, by giving us timely warning, enable us, at all events, to prevent the citadel being taken by surprise, and by so doing we shall often be able to disconcert the enemy and check his advance, and thus realize in as full a measure as possible the long life for which we were intended.

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[1] Beneke, *op. cit.*, p. 24.

[2] Foster, *op. cit.*, p. 132.

[3] *Op. cit.*, p. 26.

II.—NOTE ON PRELIMINARY TRACHEOTOMY AS AN AID TO CERTAIN OPERATIONS.

By **Thomas Annandale**, Regius Professor of Clinical Surgery, University of Edinburgh.

In this note I desire to add my testimony to the value of performing preliminary tracheotomy in certain operations involving the mouth, throat, or jaws, and also to describe a simple appliance which I have found from experience to be most efficient in carrying out the principles of this proceeding.

All practical surgeons acknowledge the importance of this aid in suitable cases, and my attention was first seriously directed to the subject in connexion with several cases of accidents occurring during the progress of an operation from blood passing into and obstructing the air-passages. The patients in these cases were under the influence of an anæsthetic, and their lives were only saved by prompt tracheotomy, and the removal of the obstructing blood and clots.

The occurrence of these cases and a knowledge of others leads me to urge that preliminary tracheotomy should be practised perhaps more frequently; and my own experience of this aid to operating in cases which are likely to be attended by hæmorrhage into the air-passages has given me confidence in practising it, and also in advising its practice by others.

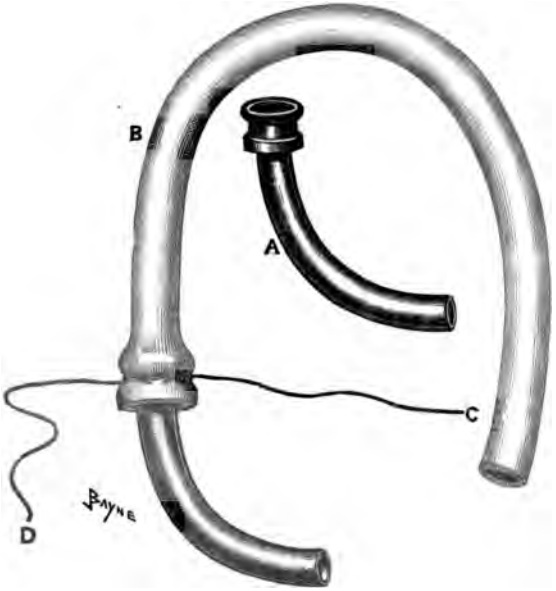
The two important principles of preliminary tracheotomy in the class of cases referred to may be briefly stated as,—(1.) The prevention of blood passing into and obstructing the air-passages; (2.) The security of free and proper respiration, together with the safe and convenient administration of an anæsthetic. In addition, I think it is as well that much blood should not pass down into the stomach, as it may cause vomiting, and so interfere with the operation.

In the *New York Med. Journal* for March 24th, 1883, there is an excellent practical paper upon the subject by Dr Charles M'Burney, and also a note of a discussion upon his paper. Dr M'Burney refers to the objects of the operation, and agrees that it can be carried out efficiently by an instrument more simple than that of Trendelenburg. It is generally admitted that the instrument of Trendelenburg, and also the modifications of it, although most ingenious, are not very satisfactory in practice, as they may readily get out of order, and be useless to carry out efficiently what is required of them. Accordingly, those surgeons who have practised preliminary tracheotomy in recent times have endeavoured to employ some more simple apparatus, and I will now describe the one which I have used with perfect success, and to which, therefore, I direct the attention of my professional colleagues.

It has been suggested that the preliminary tracheotomy should be performed some days or weeks before the major operation, but most surgeons are, I think, agreed that this is quite unnecessary, and that the best time to perform it is immediately before the operation which it is desired to aid.

I prefer to open the trachea at its upper part above the isthmus of the thyroid; but if any condition prevents this, I would then perform laryngotomy.

My apparatus, figured in the woodcut, consists of a vulcanite tracheotomy tube (A), which has a broad ring attached to, but moving round its neck, and of a piece of ordinary india-rubber tube about eighteen inches long, and having a diameter of half an inch. One end of the india-rubber tube (B) is passed over the ring at the neck of the tracheotomy tube, and secured to it by a piece of strong silk, the ends (D and C) of which are left long. The trachea or larynx having been opened, the tracheal tube is



introduced as far as its neck, and then each end of the silk is, by means of a needle, brought through the corresponding edge of the wound in the skin, and when these are tied together they not only retain the tube in the trachea, but also close the external wound, and prevent any blood passing into the trachea in this way. The movable ring round the neck of the tracheal tube has the advantage that it allows of some corresponding movement of the tubing connected to it, so that the latter is much less liable to be twisted or bent, and its canal to become obstructed.

To administer an anæsthetic, the free end of the tubing is introduced into a glass or tumbler, in the bottom of which a little cotton wadding is placed, and upon this cotton wadding chloroform or ether is dropped from time to time as may be required to keep up the anæsthesia. The tube and glass are held by an assistant at one or other side in the position which least interferes with the manipulations of the operator.

Immediately previous to the major operation, and after the tracheotomy has been performed, the throat is thoroughly stuffed by means of a piece of sponge or some cotton wadding, which should be *covered by oil-silk or other thin waterproof material*, in order to diminish the chance of any blood oozing through the pad. It is well to attach to the pad a piece of strong silk or thread for the purpose of withdrawing it more readily.

Should the bleeding have ceased and there be no risk of swelling or œdema in the neighbourhood of the glottis, the tracheotomy tube may be removed immediately after the completion of the operation, but if these favourable conditions are not present it is safer to leave in the tracheal tube, detaching the tubing from it, for twelve or twenty-four hours, or for a longer time, according to the symptoms. I would like further to add that on three occasions lately I have, in order to facilitate the removal of large and vascular tumours involving the mouth and throat, not only performed preliminary tracheotomy, but also preliminary ligature of the corresponding common carotid artery. All these cases were successful, and I attribute much of their success to these preliminary operations.

III.—ON EMPYEMA.

By WILLIAM RUSSELL, M.D., F.R.C.P.E., Lecturer on Pathology in the School of Medicine; Clinical Medicine Tutor in the Royal Infirmary; and Physician to the New Town Dispensary, Edinburgh.

(*Read at the opening of a Discussion on Empyema at the Medico-Chirurgical Society of Edinburgh,* 16*th February* 1887.)

WHEN asked by one of the Secretaries to contribute a paper to this Society, the subject of Empyema was suggested to me by the case I presented at our last meeting. I have had some difficulty in deciding how to treat this subject. I thought first of simply detailing the cases I have personally been responsible for, and making a few remarks on the general subject; but on second thoughts I decided to treat it in a more general way, and not only to utilize, regardless of their chronological order, the cases which I myself have had, but also to make use of the experience I have acquired by having, in one way or another, been brought into personal contact with many cases for which, however, I was in no degree responsible.

With reference to the general question of effusion, either serous or purulent, into the chest, I wish to refer to the physical signs which are present in children when the effusion is moderate or scanty. These signs are particularly indefinite. The local dulness is slight, and may be overlooked, and often passes unrecognised, because of the vigour with which percussion is usually performed. In these cases it is necessary to percuss with extreme lightness, and the sense of slightly increased resistance, which is present, is as valuable as the pitch and quality of the sound, if not more so. The normal type of breathing is present over the affected side, or it may be slightly softer than the normal puerile. The respiration over the unaffected side, on the other hand, is exaggerated, and in the more marked cases might readily enough be mistaken for bronchial. The degree of exaggeration depends, of course, on the greater or less amount of effusion causing a proportionate amount of work to be thrown on the unimpeded lung. The possibility of the healthy lung in a case of moderate pleural effusion being mistaken for a pneumonia has, I think, to be recognised. The indefiniteness of the signs, and yet the importance of appreciating such as are present, have long been impressed on my mind. I have had many cases in which a very slightly increased dulness, and a slightly increased sense of resistance, have led me to diagnose effusion in children when the stethoscope gave me little help. Such cases I have seen dragging out a very unsatisfactory course, until I removed the small quantity of fluid which I believed to be present. After the removal the cases rapidly recovered. The same difficulty in diagnosis is present when the effusion is purulent and scanty. In illustration of this I may give the following case, which, owing to its having been complicated with capillary bronchitis, strikingly illustrates what I have stated to be the character of the physical signs when effusion is slight.

CASE I. was a child thirteen weeks old I saw it on 28th May 1882. It was evidently pained, and the breathing was much accelerated. The right half of the chest was slightly dull, but the respiratory sounds were audible all over it; not only that, but râles were audible even to the base posteriorly. I suspected fluid, and explored with the hypodermic syringe, and withdrew it full of pus. With the aspirator I then withdrew 4 or 5 ozs. of pus.

This relieved the infant, and the dulness was diminished; but there were crepitations over both lungs. The child was suffering from capillary bronchitis in addition to the empyema, and in spite of all I could do for this condition, the lungs became crowded with fine crepitations, the cyanosis deepened, and the infant died on the 30th, two days after I had aspirated.

The case which I presented at the last meeting further illustrates this; the facts are as follows:—

CASE II.—Emma T., aged 8½ months, was brought to me at the New Town Dispensary on the 1st September 1886, and was diagnosed as a pleuro-pneumonia of the posterior part of the right base. Mr Hope Grant, one of the students attached to me at the Dispensary, got the case in charge, and I may at once express my appreciation of the conscientious and intelligent perseverance he displayed in its care, for it was largely owing to these qualities in him that the successful result which you have seen was attained. On the 14th September 1886 he asked me to see the child with him, as it had become much worse. On examination I diagnosed pleural effusion on the right side. There was dulness, but the respiratory sounds were perfectly audible, while over the unaffected side the type of respiration approached the bronchial, owing to its extreme harshness and the prolongation of expiration. The child was cyanotic, its pulse small and irregular, its breathing rapid, and its aspect one of suffering and danger. I punctured, and withdrew a hypodermic syringeful of clear serum. The following day, although the child seemed to have improved in its general condition, there was no alteration in the physical signs, so I aspirated, but only got about 2 ounces of clear serum. After this the child seems to have got on pretty well for a time, but on the 30th of September I again saw her, and withdrew 4 ounces of thin pus, or what I may call purulent serum. I again saw the child on the 4th of October, when she was looking better, although she was sweating occasionally, and was emaciated. The right half of the chest was dull from the mid-axillary line backwards. Breathing was audible all over this dull area, but it was only one-half or one-third as loud as over the unaffected side. When I saw the child a week afterwards, on the 11th October, the dulness had apparently increased, and the child's general condition had continued most unsatisfactory. Breathing was still audible all over the affected side. I again explored, and withdrew a hypodermic syringeful of thick, greenish pus. I opened into the empyematous cavity the following day, making two openings and passing a drainage-tube between them. At the operation about 5 ounces of thick pus were evacuated, and on exploring the cavity I found it to be encysted. The drainage-tube was removed on the 18th of November, and the local dressing was stopped on the 8th of December.

The next case is an example of a common enough type in youth:—

CASE III.—Thomas H., aged 15, was on the out-patient list of the Carlisle Dispensary. I saw him on 1st March 1881 with the house-surgeon, under whose care he was. The boy was suffering from great dyspnœa. There were the usual physical signs of a very abundant effusion into the left pleural cavity, the most incontrovertible of the facts in evidence of its abundance being that the heart was beating in the line of the right nipple. With reference to the history of the case I can say little; no systematic thermometric observations were kept; the attack dated from eleven days before I saw him, and there had been profuse perspirations. He said he had been subject to pain on the affected side for years. The indications imperatively demanded immediate aspiration. At the operation I removed fully 90 ounces of pus. The pus was perfectly sweet. This was on the 1st of March. On the 6th there was evidence of reaccumulation. This being verified by means of the aspirator, the lad was put under chloroform and the pleural cavity opened. On the 10th, three days after operation, it was noted that the patient was perspiring much less, the tongue was clean, the appetite good, the drainage was perfect, the heart's impulse was slightly to the left of the sternum, and the pleural cavity was being washed out daily. I have no further note until the 16th of April, a month and ten days after the operation, when it is stated that the patient had been doing well, that the cavity had become small, and that he was only to be dressed every second day. There is a further note to the effect that he had had occasional pains in the right hypochondrium accompanied by sweating, but these attacks had always passed off without any special treatment. Although I have no note of the precise date when the wounds were completely healed, I believe they were in between six and seven weeks from the date of the operation; at all events they were so on the 31st May, when I noted that the lad looked plump, that there was considerable flattening, and that there was practically no respiratory movement on the left side. The percussion note was impaired all over the affected side. At the end of inspiration there was a subcrepitant crackle, which was more marked over the upper than the lower half of the lung.

CASE IV.—This case was recorded at length, and published in the *Glasgow Medical Journal* for September 1883. I will, therefore, only briefly sketch its course here, although it was one of great interest, and belonged to the important group of Primary Acute Fœtid Empyemata.

Helen T., æt. 21, was seen by me on the 1st of September 1881. She complained of pain in the left side, which dated its onset from the previous day, and was aggravated by inspiration and the movements of the trunk. There was slight cough. The temperature was raised and the pulse quickened. The lower part of the left half of the thorax was kept almost motionless during respiration. There was no dulness over this region, but the respiratory murmur was exceedingly faint, save when the patient hesitatingly drew a longer inspiration, and cautiously relaxed the rigidity of the part. My belief at that time was that the girl had an attack of diaphragmatic pleurisy. During the first week of her illness the temperature, which was taken night and morning, ranged from 101° to 103° F. The pain was during all that week not only more severe than I had ever seen pleuritic pain, but also more obstinate and unyielding. Hot poultices gave practically no relief, and morphia hypodermically gave only temporary relief. Friction was at no time heard, but there was evidence that fluid was slowly accumulating.

On *8th September* I explored with the aspirator to ascertain whether the effused fluid was purulent or not. The result was that a pint of excessively fœtid pus was withdrawn, the fœtor filling the room in which we were. I did not empty the chest, as it was evident that any measures short of incision and free drainage were not to be thought of. The following day I made two openings into the pleural cavity, and passed a large drainage-tube between them. The wounds became covered with a dirty gray false membrane, and the patient's general condition denoted a degree of septic absorption, for she had profuse sweatings and some slight rigors. The pleural cavity was daily washed out freely with a 1 in 80 solution of carbolic acid, and oakum was used as a local dressing. The discharge under this treatment became daily less fœtid, and before a week had passed it was quite sweet, and had diminished much in quantity.

On *3rd October* I noted in my case-book that the discharge had gradually lessened in quantity, and that a day or two before this date the drainage-tube had been withdrawn from the upper wound, as there seemed to be only a sinus connecting it with the lower one. The patient's general condition was fair, there were neither nocturnal sweats nor intermittent sensations of chilliness; cough, however, had frequently been very troublesome, and was at this date severe, hard, and paroxysmal in character, and the patient's mother had noted a bad smell with her breath for some days. On the suspicion that there might be a small encysted accumulation of pus, I made two exploratory punctures with the aspirating needle in the situation which seemed most likely after careful physical examination, but with a negative result.

On *8th October* the lower wound had contracted so much that it would no longer admit the drainage-tube.

On *12th October* the cough was again severe; the breath had a fœtid odour when the cough was violent, and she had perspired much the two preceding nights. A probe was passed along the track of the sinus which still remained, but without result.

On 13*th October* she expectorated about half a teacupful of purulent matter tasting "like rotten eggs." The cough abated after this, and the breath lost its fœtor.

On 23*rd October*—that is, between six and seven weeks after the operation—the wounds were quite healed. Breathing was audible all over the side which had been affected, except in the neighbourhood of the cicatrices, and there was no retraction. I did not see the patient again until the 26th of January of the following year. She had been in good health in the interval, but for two days at this date she had a severe cough, with a purulent and bad smelling expectoration, and associated with nocturnal sweatings. These symptoms had been preceded by pain in the epigastrium and upwards in the sternal line. The symptoms again disappeared, and when I saw her on the 21st of February she had continued well, and had gained in both strength and flesh.

The problem which so prominently presented itself in this case was: How came the empyema to be primarily fœtid, seeing there was no evidence of pulmonary gangrene or of communication with the outer world? Soon after this case had occurred Professor Gairdner and Professor Buchanan, of Glasgow, published jointly a similar case, and, strange to say, it was the first of its kind which Professor Gairdner had seen. I looked up the subject, in a very incomplete way I admit, but I got together eight cases, including my own, and found that they had all occurred on the left side, and at least one of them had, like my own case, been diagnosed as a diaphragmatic pleurisy. I suggested at that time that the phenomenon might be explained by the proximity of the large intestine to the diaphragm on the left side, and that the contamination had probably been aided in its transit by the inflamed condition of that muscle. However that may be, the fact remains, that a primary empyema on this side may be fœtid. I have not looked further into this subject, and should be glad to know if any undoubted case had occurred on the right side, for if there had, the anatomical relations of the parts would not be a sufficient explanation.

Case V.—The notes of this case I have either lost or mislaid. The patient was a girl of about 14 or 15 years of age. She had for a time been under the care of a medical friend who had first seen her, when what appeared to him to be the ordinary symptoms of advanced phthisis were present, the leading symptoms being copious purulent expectoration, hectic, sweating, and emaciation. Soon, however, his attention was drawn to a swelling in one of the intercostal spaces below the level of the right nipple. He then suspected the true nature of the case, and asked me to see it. I may briefly say that the case turned out to be an empyema discharging through a pulmonary fistula, and pointing at the spot on the anterior aspect of the chest already referred to. I opened it at this point, but it soon became evident that the opening did not drain the cavity. A second opening was accordingly made at the lowest possible interspace posteriorly. I at the same time explored the limits of the cavity, and found it to be a very large one, extending far up, both anteriorly and posteriorly. With the establishment of free drainage the girl rapidly improved, lost all hectic symptoms, became plump and fat, and was going out. So far as I can remember the wounds healed, and she was regarded by her friends and her medical attendant as practically cured, although I confess to having been sceptical of the completeness of the cure, owing to reasons which are partly apparent and others which need not be specified. She had a relapse, I think, but I left the district and saw no more of her, and I have neglected to acquaint myself with her subsequent history. This case hardly requires any comment. The possibility of such an error in diagnosis is apparent. Its cure I have already expressed my scepticism about, for the case had lasted long enough for the lung to have become firmly bound down in its compressed state, and the pus cavity was of such vast dimensions that I regarded the case, from the first, as one in which excision of ribs would probably be ultimately necessary.

CASE VI. was a boy aged about 4 years, whom I saw with Dr Murphy of Carlisle on the 1st of May 1882. He had had measles three weeks before I saw him. There were present the ordinary signs of fluid in the left chest. The breath sounds were absent. The heart was beating at the right nipple. There was no bulging of the intercostal spaces and no local œdema. The temperature was elevated, and he was and had been perspiring profusely. Respiration was accelerated. With the aspirator I drew off about a pint of greenish pus which was quite sweet. The heart returned to its normal position, and the respiratory sounds became audible over the back. There was soon evidence of reaccumulation, but the parents would not sanction any further operative interference. On the 27th they at last consented; but when I saw the child he was cyanotic, with a pulse which was at times imperceptible, and so ill that we considered operative interference to be hopeless, at least, it seemed to be so certain that the child would die in our hands if we attempted the operation, that we, what is commonly called, *funked* it. Looking back on the case, and with the courage of wider experience, I do not think that in similar circumstances I would hold my hand, but would face the risk of the opprobrium which is apt to accrue from death occurring during medical interference. The case was a desperate one, and required the courage desperate cases demand.

These six cases are, in their respective ways, examples of common enough types. I have still, however, a few more facts connected with cases to refer to. I well remember the case, which occurred a number of years ago, of a man who died without any more definite opinion of his case having been reached than that "there must be pus somewhere." At the post-mortem examination I found to my chagrin that neither I nor others had discovered a localized empyema confined to the upper part of the lateral region of the right half of the chest, that is the axillary region. Of course there were difficulties, but difficulties can hardly be pleaded as excuses.

Another case was that of a man with a patch of gangrene at the right base, followed by pleurisy and effusion. Above the limit of the effusion there was a very markedly tympanitic note which led the physician in charge of the case to insist, in spite of all the evidence I could lay before him, on its being a pneumo-thorax, the result of perforation at the seat of gangrene. The post-mortem examination revealed a pleural cavity full of pus.

This tympanitic note above pleural effusion is as interesting as it is common, and need not be discussed now, but it is evidently possible for it to mislead.

Among the unfortunate sequelæ I have seen after operation I may mention pyæmia. A very disappointing case, which I saw in a friend's hands, was that of a lady rather advanced in life, who had been operated on, and had practically recovered, when the wounds, which were not quite skinned over, were attacked with a very virulent form of erysipelas, which rapidly proved fatal.

Passing now to the differential diagnosis of purulent from serous effusion, it seems almost superfluous to say anything, as it is so easy by means of the hypodermic syringe to remove all possibility of doubt. Among the symptoms, however, which point to the effusion being purulent may be enumerated, profuse perspirations appearing early in the history of the case; the local temperature being higher on the affected than on the unaffected side; severe and obstinate pain;[1] and, as some believe, the presence of œdema of the chest wall. If pus is suspected, the sooner the question is settled absolutely the better for the patient.

Coming now to treatment, we have to bear in mind that cases are on record where, especially in children, aspiration of the whole or even a part of the pus has been followed by recovery. I have not had this experience so far, but it has to be reckoned with. Instead, however, of attempting to examine the wide controversies which occupy the pages of medical literature, I may perhaps be allowed to state what has hitherto been my general line of procedure. It is usually some days after the onset of a pleurisy before one suspects pus, and if the effusion is not great, the suspicion is reserved for perhaps a week or so, the length of time depending on the strength of one's suspicions. If pus is found, I am careful to remove it as completely as possible by means of the aspirator; this requires time, for spasmodic cough is apt to come on and to necessitate the interruption of the operation. After this, if there is evidence of reaccumulation in the course of a few days, the chest ought to be again explored; and it is well to be ready to operate, for if pus is reaccumulating, the sooner a free outlet is provided for it the better.

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[1] This symptom I learnt from my friend Dr Lockie of Carlisle.

With reference to the operation itself I have little to say. I am not a surgeon, but this is one of the operations it is desirable a physician should be able to do, as surgical skill is not always available at the proper moment. I therefore have a very simple way of performing it. I pass the needle of the aspirator or the hypodermic syringe into the cavity. Taking the needle as my guide I cut through the soft parts into the cavity and enlarge the opening freely with a probe-pointed bistoury. I then pass a strong probe—indeed for this purpose I always use a uterine sound with its normal bend—into the wound and downwards until it reaches the diaphragm; I feel for the first intercostal space above it, and press the point of the sound until I feel it from the outside; I cut down on it, and enlarge the opening as I did the upper one. I tie a piece of strong string of some kind round the point of the probe and withdraw the probe with the string attached; by means of this string a thick drainage-tube is introduced into the pleural cavity, one end allowed to project from either wound, and united externally by means of a stout string. By this very simple proceeding thorough drainage is established; but, what I think of great importance is, that complete control is obtained over the drainage-tube, which can be taken out and washed and reintroduced at pleasure and without difficulty. The cavity can be very thoroughly washed out by filling it from the top wound and keeping the lower one closed, and then allowing it to empty itself by the lower. I have found that the cavity gradually contracts until only the track of the drainage-tube is left, the tube is then withdrawn from the top wound, and the sinus gradually heals from above downwards.

With reference to the further operation of removal of ribs, which is necessary in some cases, I have little to say—the operation belongs exclusively to the surgeons. I have seen a considerable number of cases in which it was performed; some were successful, many were not. What I have not yet had sufficient evidence to satisfy my mind on is, whether this operation would ever be necessary if cases came under observation early enough, and if proper steps were taken with them when they did.

If an effusion is left until the whole or a large part of the lung is compressed, and has developed a new fibrous covering fitting its diminished size, it is absolutely hopeless to look for expansion, and it would not only be necessary, as Mr Duncan humorously but truly suggested some time ago, to take a slice off the entire half of the thorax, but it would be necessary to remove the whole half, only leaving a slice.

I have, gentlemen, taken the liberty of submitting my own experience to you on this important subject, and I only hope that the personal form which it bears may be approved by you.

IV.—REPORT OF A SUCCESSFUL CASE OF NEPHRO-LITHOTOMY IN A YOUTH AGED 15 YEARS.

By Frederick Page, Surgeon to the Infirmary, Newcastle-upon-Tyne, and Additional Examiner on Clinical Surgery, University of Edinburgh.

I was asked last November by my colleague Dr Limont to see with him a lad who had been under his care in the Newcastle-upon-Tyne Infirmary for some few weeks with well-marked symptoms of stone in the kidney. The youth was a clerk, aged 15 years, and had lived all his life in a healthy upland district at Beamish in the county of Durham. He had been always well cared for, and, with the exception of the symptoms I am about to narrate, had suffered from no illness nor from any accident. When he was about four years old blood was noticed in his urine, and he has had slight hæmaturia from time to time since then. Running, jumping, or lifting has usually been the exciting cause of the bleeding. Pain, however, has been a more marked symptom than bloody urine. He describes the pain as being often very acute, and latterly much more so, "like a knife passing through the left loin, round the belly into the left testicle, and down the inner side of the left thigh; sometimes, too, it shot across the loins." During the attacks of pain the testicle was retracted on the left side. Whilst under Dr Limont's observation he had several severe attacks of renal colic. He was obliged to rise several times during the night to make water, and on two or three occasions he passed a considerable quantity of red sand—uric acid crystals. Pressure over the left kidney at one well-defined spot gave rise to acute pain, and at this spot it seemed to me a calculus could be distinctly felt in the kidney. The youth was thin and remarkably anæmic, much more so than the slight loss of blood which he occasionally experienced would account for. Agreeing with Dr Limont as to the strong probability of there being a stone lodged in the left kidney, the case was transferred to me for operation.

On 9th November the kidney was exposed by an incision, 5 inches in length, at right angles to the spine, and pricked in various directions with a long needle, till a stone was detected situated deep in the kidney, at about its centre. The friable substance of the gland was readily broken down with the finger, and the stone felt, but not reached, for a strong tough membrane separated it from the finger. With considerable difficulty this membrane was at length scratched through, and the stone liberated. The operation was a long one, and accompanied with considerable bleeding. The lad rallied slowly. At night, 8 hours after operation, his pulse was 88, and his temperature 97°·5. Next morning the temperature was 101°, pulse 106; and in the evening the temperature rose to 103°, and the pulse to 170, the breathing being very quick and painful. He was found to have double-capillary bronchitis, with pleurisy, and remained in a critical condition for many days. On the day of operation and the day after there was blood in the urine, but on no other occasion. On the seventh day he passed 68 ounces of urine—the largest,—and on the twenty-second only 10 ounces, the smallest quantity during any one day subsequent to the operation. The wound healed readily, and on 16th January he was discharged, his stay in hospital having been prolonged in consequence of the extreme severity of the weather.

The stone, of which the accompanying chromo-lithograph is a faithful representation, weighs 24 grains, and Professor Bedson, who has kindly examined it chemically, tells me it consists almost entirely of oxalate of lime.

Remarks.—The diagnosis of stone in the kidney resembles that of stone in the bladder in this particular, it cannot be positively affirmed that a stone is present in either situation from symptoms alone. The kidney has been often explored for the purpose of finding a stone when there was no stone present, and it is a sound rule in surgery never to perform lithotomy unless at the time of operation a stone can be felt with an instrument introduced into the bladder. In the case reported, all the symptoms of stone in the kidney were present, and I believe the calculus lay free in the pelvis of the kidney. The stone was readily found, but from its small size, and from its freedom of movement, not so readily extracted as is usually the case. The grave chest symptoms from which the boy suffered so severely were due, I believe, to the chilling effects of the spray used during the operation, and I very much regret its employment.

V.—INTERNAL DERANGEMENTS OF THE KNEE-JOINT.

By W. Scott Lang, M.D., F.R.C.S.E.

(*Continued from page* 722.)

Treatment.—Seeing that this luxation occurs only when the knee is completely flexed, the best treatment will be to avoid this movement, or the joint may be put up in plaster of Paris, as was done by Mr Lucas, in order to give the coronary ligament a chance of healing.

Incomplete Luxation of External Cartilage.—In this form of derangement the symptoms are more obscure than they are when luxation occurs to the internal cartilage, for the external cartilage does not approach so near the surface, and consequently less can be made out by palpation. Without having discussed the nature of any of the varieties of internal derangement of the knee-joint, and although he did not distinguish between luxations of the

Oxalate of lime calculus from M^{r} Paget's case of Nephro lithotomy.

Danielsson & Co London, del & lith.

internal and those of the external cartilage, Hey, in his work already quoted, alludes to a case which was evidently of the nature indicated in this heading. It occurred in 1782 "to a gentleman as he was turning himself in bed." It was evidently the external cartilage which was affected, for Hey states "that there was some pain at the insertion of the tendon of the biceps femoris into the head of the fibula." A sudden and accidental cure took place as the patient was standing or moving about and talking to Hey.

In Cooper's *Surgical Dictionary* a case is recorded as having been treated at the London Hospital. It was diagnosed "as a dislocation of external semilunar cartilage, and all efforts to reduce it were ineffectual, and the patient left hospital in a month unable to bring the heel to the ground or to extend the knee beyond a certain point."

Sir W. Fergusson, *Practical Surgery*, 5th edition, p. 323, records a case of a gentleman about 40 years of age who, from an accident which had happened to him twenty years previously, "sprain of knee," suffered dislocation of external semilunar cartilage. Like Mr Hey's case, it went in at first suddenly and accidentally (by a fluke, if the term may be allowed), after having caused lameness for a considerable time, but afterwards it frequently suffered displacement. "The limb during the displacement could never be fully straightened until, by pointing the toes outward as much as possible, and then lifting the foot forward, which the patient usually did with the other foot behind the tendo Achillis, a sudden slip at the knee was felt, when all was at once right again." He adds,—"I have seen two other instances within the last twelve months where there was every reason to suspect such displacement of a semilunar cartilage, and in both of them there appears every likelihood of permanent lameness."

A case of this description has been under the notice of the writer for some years. It occurred in the person of a fellow-student, now a graduate in Medicine and Surgery, and the following is the history of the case:—Mr L——, aged 19, was playing football. He was just in the act of "dropping" when he was charged over. He could not say exactly how the violence was applied to his knee, but *when* it was applied the knee was semiflexed. The pain at the time of the accident was very severe, localized, and almost exactly over the biceps tendon and external semilunar cartilage. He could not completely flex nor extend the limb. There was no effusion, and in three days he was allowed to get out of bed. A fortnight later he started playing football again, and from this it may be concluded that there could have been no serious rupture of ligaments, for healing of such could not have taken place in a fortnight. The rest of the case may be given in the patient's own words: "After playing for a time I slipped and fell. The pain on the second occasion was very severe, as I rolled on the grass for about ten minutes. The limb at this time was fixed in the semiflexed position. After some hours there was a great deal of effusion in the joint. I was in bed for a fortnight, and lame for about three months after this accident. . . . On three subsequent occasions, and at intervals of about six months from each, the same accident happened, the pain on each occasion being severe, and followed by synovitis with copious effusion. It has also happened while I was in bed, and I have since done it while sitting at table. The pain is now nothing to speak of, but always distinctly localized on the external aspect of the joint, exactly opposite the external semilunar cartilage. I think I could always displace it by crossing my left leg (the injured one) over the right. I have never succeeded in replacing what has gone wrong. No abnormal projection was ever seen or felt." This is the case to which brief allusion has already been made in order to bring out the fact, as stated by the patient, that the limb is "far safer and stronger when the toe is pointed *outwards*."

From these cases it will be seen that reliance has to be placed mainly upon subjective symptoms in order to diagnose this condition.

Another case recently came under the observation of the writer where there was reason to suspect this variety of derangement. The patient was seated on a low chair with the right leg considerably flexed, thrown under the chair and resting upon the outer edge of the foot—that is, flexed and rotated inwards. On attempting to extend the limb it was found that the knee-joint was fixed, and there was great pain. The disorder was at once reduced by flexing the limb still further and rotating the leg outwards, and then extending the joint.

In discussing the mechanism involved in this luxation or subluxation three different movements require to be kept in view. 1st, There is the rotation of the tibia inwards, described by Goodsir as inseparable from complete flexion of the joint. This, however, will not explain the condition, for after the accident has happened there is not only inability to flex the joint completely, but there is also inability to extend it. The joint is more or less completely locked. (In the subluxation at anterior part of internal semilunar cartilage, already described, there is only *inability to completely extend the limb*, as asserted by Smith, Sir A. Cooper, etc., and verified by the writer in his own person.) 2nd, There is a sort of pendulum movement without any rotation which may take place between the tibia and femur when the ligaments are relaxed in flexion. 3rd, There is the movement of rotation of which the tibia is capable in flexion round a prolongation of its own axis. This rotation may extend through about 36° in the horizontal plane of the joint, and to it must be referred the derangement now under consideration.

In experimenting on the cadaver, this is the displacement (subluxation) which can be produced with greater ease and certainty than any other. The knee requires to be well flexed (it will then be found that the external femoral condyle almost entirely leaves the external semilunar cartilage), the foot and leg are then rotated strongly inwards, and the leg gently extended while maintaining rotation inwards—a little pressure on the outer rim of the external semilunar cartilage may be required to assist, but the external condyle of the femur can be readily made to ride upon the postero-external part of the rim of the external semilunar cartilage,[1] and the "locking of the joint" more or less completely effected, even on the dead body. Of course, in the living, the so-called locking is more complete, by reason of the great pain when attempting to move the joint.

When the leg is rotated inwards the crucial ligaments are rendered tense, and it must be borne in mind that the posterior cornu of the external semilunar cartilage has an attachment to the posterior crucial ligament. This fibrous attachment is then rendered tense when the leg is rotated inwards, and tends to draw the semilunar cartilage more under the external condyle, and, it will be remembered, that during this rotation of the leg inwards the gap between the external femoral condyle and the head of the tibia is increased, and the external cartilage more movable. In aggravated cases of this lesion, the coronary ligament will probably be torn where it is pierced by the tendon of the popliteus muscle, and thus there might be produced a complete and persistent luxation, such as that shown by Mr Godlee.

It has been asserted that this lesion is in reality a rotatory dislocation of the tibia upon the femoral condyles, and not without show of reason, for the rotatory movement, of which the tibia is normally capable when the ligaments are relaxed in flexion, might be looked upon as a dislocation of bone, and it is simply by preventing the readjusting movement from taking place when the limb is being extended that the luxation in question is produced. The importance of recognising this condition and treating it properly is very great, for it is somewhat distressing to read of the result of the case treated at the London Hospital (Cooper's *Surgical Dictionary*); also of the two cases mentioned by Sir William Fergusson, already quoted, in which there was every reason to suspect the existence of this condition, and in which permanent lameness was the result. Another case has been brought under the writer's notice recently, where the lesion was, in all probability, one of this nature, and the patient, a gentleman of active habits, after getting no relief from his own medical attendants, finally had recourse to a notorious "bonesetter." He made a sudden and complete recovery, and the "bonesetter" got the credit.

This condition, then, having been recognised, the treatment ought to be to flex the leg fully, endeavour to free the cartilage by moving the leg from side to side like a pendulum, rotate the foot and leg firmly *outwards*, and then extend suddenly while endeavouring to maintain rotation outwards. This treatment slightly resembles that adopted in a case mentioned by Sir A. Cooper, "in which the patient used to accomplish the reduction by sitting upon the ground, and then bending the thigh inwards and pulling the foot outwards" (*Surgical Dictionary*). There is also a resemblance to it in the treatment adopted successfully by Sir W. Fergusson's patient, viz., "pointing the toe *outwards*, and then lifting the leg forwards with the other foot behind the tendo Achillis."

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[1] The part must be dissected to some extent in order to show this.

Regarding treatment in general, it may be stated that before attempting the cure of any of these internal derangements of the knee-joint, the exact nature of the lesion ought to be made out as fully as possible. No rational treatment can be adopted except that which is founded upon an accurate diagnosis.

In adopting the treatments herein advocated, it will generally be advisable to administer chloroform to the patient, especially should there be much pain and locking of the joint, for spasm of the muscles may require to be overcome. Should the methods of treatment recommended fail after several attempts, the question of opening the joint will be raised, and, as far as can be gathered from all the authors who have written on this subject, the luxations most likely to lead to permanent lameness are those of the external cartilage. Luxations of the internal cartilage, according to Vincent, do not leave permanent lameness. They probably get reduced either by accident or after distension of the joint from synovial effusion. Now-a-days, rather than accept the "permanent lameness" which seems to have resulted in several cases of luxation of the *external* cartilage, it would be advisable to open the joint, and, as a transverse incision would destroy the insertion of the biceps and also the external lateral ligament before a good view of the external cartilage could be obtained, a vertical incision might be advisable.

The only recorded case, however, where the knee-joint was opened on account of "internal derangement" was on account of a troublesome recurring partial luxation of the internal semilunar cartilage. It is recorded by Professor Annandale, in the *British Medical Journal*, April 18, 1885,—"On opening the joint the semilunar cartilage (internal) was seen to be completely separated from its anterior attachment, and was displaced backwards about half an inch." Stitches were introduced to keep the cartilage in position, and the result was a complete success, for the patient was seen again some months later, and was found to have a sound and useful knee, whereas he had been unable to work for ten months previous to the operation. This might be termed heroic treatment, and the question as to whether or not it ought to be applied must be decided by the usefulness or uselessness of the limb, and the occupation of the patient must here come into consideration. Still, it must be admitted in favour of operation, that these constantly recurring luxations are very unpleasant and often painful, although they may not prevent a patient following his ordinary occupation; and, as with each recurrence a slight amount of tenderness and synovitis is almost invariably present, extensive disease of the knee-joint might be brought on, especially where there happened to be a rheumatic or strumous tendency to general disease of the joint.

Patients will often apply for advice in order to prevent the recurrence of some internal derangement of the joint. The first point to settle will be to exclude the possibility of a "loose body in the joint," or a pedunculated tumour (the two conditions which most closely simulate luxation or subluxation of a semilunar cartilage). Should operative interference not be considered justifiable, the best palliative treatment (it may be also curative) will be to recommend the wearing of some apparatus to restrain the movements of the knee—either an elastic bandage or a leather knee-cap, probably the latter is the best. Should the luxation be of the internal cartilage, it is most important that the patient should be instructed to keep the toe pointed *inwards;* and should the external cartilage be affected, the toe should be turned *outwards*, to obviate recurrence of the derangement.

VI.—ON A CASE OF POISONING BY CORROSIVE SUBLIMATE.

By Henry M. Church, M.D., B.Sc., F.R.C.P.E.

(Read before the Medico-Chirurgical Society of Edinburgh, 3rd November 1886.)

In all works on Medical Jurisprudence, cases of poisoning by corrosive sublimate are recorded. The cases, however, are not numerous. According to Taylor the smallest dose that resulted in death was two grains, taken by a child; and the largest quantity taken by an adult, that did not cause death, was 80 grains. Christison in his work *On Poisons* records a still wider range of susceptibility on the one hand, and on the other, resistance to the action of the poison. According to him, salivation and even death may occur from the smallest doses of mercury. Every general practitioner must acknowledge the numerous idiosyncrasies that meet him in the prescribing of any mercurial preparation. Hence it is reasonable to suppose that the poisonous dose must in like manner vary considerably. In our own city Dr Littlejohn informs me that within the last thirty years he had met with only two cases of corrosive sublimate poisoning (the fatal dose in neither have I ascertained) until this summer, when two fresh cases have been reported, one of which is the case I am going to relate. It has, as will be seen, a special medico-legal interest, on account of absence of mercury in the system after death.

In the following case of accidental poisoning a glycerine solution of corrosive sublimate was given for a dose of castor oil. The exhibited phial contains the substance. Though the colour is whitish, the physical properties are not unlike those of castor oil. After the usual training at the Maternity Hospital, a nurse, the mother of the unfortunate child, got with her, in a bottle which she did not label, a little of this substance. It was used at the Hospital as an aseptic for the nurses' hands, a little being largely diluted with water for washing purposes. The concentrated solution was prepared by Messrs M'Farlane & Co., and consisted of 86 grains of perchloride of mercury in one ounce of glycerine. As nearly as it is possible to estimate, the little girl swallowed one drachm of this concentrated preparation—that is to say, about 10¾ grains of corrosive sublimate.

On May 7th, about 4 P.M., A. B., aged 5 years and 3 months, had administered to her a dessert spoonful of this poisonous substance. The spoon was put well to the back of the tongue, and emptied. The child, discovering the error, rejected at once what she could of the exceedingly acid substance, but seems to have swallowed about one-half. From the mother's statements it appears that violent vomiting came on immediately, and that the stomach was largely emptied of its contents; this was followed by constant retching of mucus, which soon became tinged with blood. The bowels had also acted once or twice.

Four hours after swallowing the poison, when first seen by me, she had a pale ashy-coloured face, with very anxious expression. She had swelling of the lips and cheek, complained of pain in the throat and in the pit of the stomach, to which she frequently put her hand, and continued retching small quantities of mucus brightly tinged with blood. She asked constantly for water, and swallowed freely milk and white of egg. Pulse 108, fairly strong. Till 1 A.M. she remained much in the same state, and then fell into a drowsy condition till 5 A.M., when retching and purging came on. About 6 A.M. she got up, walked across the floor, put her mouth to the water tap, and drank freely during the temporary absence of her mother from the room. She fell again into a drowsy state for about an hour and a half, and then the previous symptoms returned with great virulence. At 10 A.M. her pulse was 180, very weak; respirations, 64; temperature in axilla, 105°·6, and in the rectum, 106°·6. During the night she had taken milk and the albumen of eight eggs. She seemed free from pain, but had terrors, such as a stone wall about to fall upon her, people coming to take her away, etc., also incoherent muttering about her playthings. The pupils were widely dilated and insensible to light. The most striking feature was a constant twitching of the eyelids and eyeballs, the latter being rotated upwards and kept upwards in a jerky manner. The fingers scratched rather than picked the bed-clothes, and every few minutes twitchings and tremblings of the whole body occurred, and at longer intervals violent startings. There was no salivation, but profuse mucous discharge from the nose. A little bloody mucus was occasionally discharged from the bowel. There was complete suppression of urine. Her mother states that she continued much in the same condition, with the eyes jerkingly fixed on the corner of the ceiling, till about 2 P.M., when she said, "I am dying," and in three minutes expired, exactly twenty-two hours after taking the poison.

Dr Littlejohn very kindly performed the post-mortem examination twenty-three hours after death, with the following results:—Lips livid; gums white; sordes on upper incisors; post-mortem rigidity and lividity well marked; features placid; face slightly congested. On moving head, a little grumous mucus escaped from the nostrils. Upon exposing the abdominal contents, the portion of stomach visible was of a bluish-gray appearance. The peritoneum was natural. Left lung was congested, with fully 1½ oz. of coloured serum in the pleural cavity. Right lung was also congested, with a smaller quantity of coloured fluid in its pleural cavity. In the pericardium there was about ʒss. of clear serum. The right auricle of the heart was distended with blood for the most part fluid; there was also a decolorized clot. The heart was perfectly healthy. The tongue was sodden, and the pharynx presented a general diphtheritic look. The gullet was distended. A ligature was applied to the gullet, about one inch from its upper extremity, and another to the pylorus—the stomach and gullet, with the tongue, larynx, and trachea attached, being removed to Dr Littlejohn's retiring room for careful examination. The gall-bladder was distended with normal bile. The liver was apparently healthy; spleen normal; kidneys congested; bladder empty.

In the duodenum there was no trace of congestion. The small intestines contained a good deal of flatus, presented no marked state of congestion, but there was a grayish-yellow appearance of the mucous membrane throughout. In the lower part of the bowel the mucous membrane was more of a greenish colour. The cæcum had fæculent contents, but was not congested. The transverse and descending colons were markedly contracted, but with the exception of a patch of congestion, about the size of a florin, in the sigmoid flexure, the mucous membrane of the large intestine was pale and apparently normal.

Upon examination of the *removed* parts, the stomach was found to be discoloured along its smaller curvature, the larger curvature being comparatively unstained. When opened along its lesser curvature, there stretched from the pylorus along the curvature a band, 3 inches in breadth, of intense congestion, of port-wine colour. This congestion stretched down in small patches towards the larger curvature. The rest of the stomach presented a yellowish-gray appearance. No abrasion of mucous membrane could be discovered, but along the larger curvature the mucous membrane appeared thin and diaphanous. The discoloration surrounded the entire cardiac end of the stomach, and abruptly terminated towards the œsophagus by a well-marked line of slight congestion. To within 1 inch of its upper extremity the œsophagus also presented a yellowish-gray appearance. Above this there was marked congestion, which became intense over each tonsil, on the epiglottis, and on either side of the rima glottidis. Gray patches of a diphtheritic nature covered the fauces. The trachea was markedly, and the larynx moderately, congested.

Seven specimens were removed from the body for chemical analysis, viz., the mucus from the nasal cavity, the contents of the stomach, the contents of the duodenum, the serum removed from the pleural cavity, the ejecta from the bowels six hours before death, a portion of the liver, and one kidney.

These were taken to, and carefully examined by Mr Falconer King, the city analyst, and by Mr Hunter, with the remarkable result that not a trace of mercury could be detected. Reinsch's test was what was principally employed. This is used for the detection of arsenic as well as mercury. It consists in taking a little of the fluid suspected to contain the poison—in this case corrosive sublimate—or a suspected solid dissolved in distilled water, and adding about $\frac{1}{8}$ part of pure hydrochloric acid. Into this is put a thin plate of pure copper. If mercury is present, metallic mercury deposits on the copper, giving it a gray coating which cannot be rubbed off, but takes on a bright and reflecting surface by rubbing. Dr Falconer King kindly showed me the seven plates of copper corresponding to the seven analyses, and in none of them was there any change of colour on the surface of the copper. The suspected fluids were also volatilized by heat, nor could any trace of globules of mercury be seen. The iodide of potash and other delicate tests were employed, but with like negative results.

Though in cases of poisoning by corrosive sublimate mercury is generally found after death, there are other cases on record where it has not. Taylor, in his work on *Medical Jurisprudence*, says, "A person may die from the effects of corrosive sublimate, and no mercury may be found in the tissues. A case of this kind occurred some years since at Guy's Hospital; and another in which deceased died in fifteen days from a large dose of corrosive sublimate in whisky, has been reported by Geoghegan. On this occasion, although the local effects of the poison on the throat, stomach, and bowels were of an intense kind, the viscera, on careful analysis, yielded no trace of mercury; the metal had been entirely eliminated in fifteen days." And in his work *On Poisons* the same author says, "Corrosive sublimate is not always found in the stomach of persons poisoned by it, although from its readily combining with the mucous membrane it is more likely to be detected than arsenic. In a well-marked case which occurred to Mr Watson, where 2 drachms killed a person in six days, none was found on a chemical analysis of the contents. This may have been partly due to the length of time that may have elapsed. In a case in which 2 drachms were swallowed, and the man died in four days, no mercury was detected in the stomach or tissues."

I might quote other cases, but enough are given to suggest the difficulty of the question chemically, and at the same time point out the possible importance of the absence of the poison at the post-mortem examination from a medico-legal point of view. No explanation seems to have been given of this absence of the poison. Corrosive sublimate is an exceedingly soluble salt, and is also easily reduced in contact with the animal tissues. According to its former property it might soon be dissolved and eliminated from the system; and, according to the second, might be reduced to metallic mercury, and by its weight escape from the bowel, or be imbedded in the form of small globules in the folds of the mucous membrane, and so evade detection. No doubt whatever change does take place after the poison is taken must depend much on the contents of the stomach, and also upon the antidotes administered. Christison in his work *On Poisons* writes, "It appears from the researches of M. Boullay, confirmed by those of Professor Orfila, that various vegetable fluids, extracts, fixed oils, volatile oils and resins, possess the power of decomposing corrosive sublimate. According to M. Boullay a part of the chlorine is gradually disengaged in the form of hydrochloric acid, and the salt is consequently converted into calomel, which is deposited in a state of mixture or combination with vegetable matter." At page 436 he adds, "Another important consideration is, that corrosive sublimate may be decomposed and reduced to the metallic state by the admixture of various substances either given at the same time or subsequently, and the longer the inspection is delayed, the more complete will be the decomposition which is accomplished. Iron, zinc, and other metals are the most active of these substances."

Among the older writers, when mercury was so much in vogue as a remedy, many curious instances of quicksilver being discharged from the body are given. There are instances of metallic mercury passing from the bowel, and others of its being found in the urine and sweat. Fourcroy relates the case of a gilder attacked with an eruption of little boils, in each of which was contained a globule of quicksilver. A case is also recorded where a patient had taken corrosive sublimate in doses of 1 grain a day for a month, and used a mercurial gargle, at the end of which time there was discovered a black sediment in the urine, which, when separated and dried, was found to consist of little globules of mercury.

In the case, the subject of this communication, the fatal issue no doubt depended both upon the primary corroding action of the poison upon the tissues, and upon systemic mercurial poisoning, the symptoms of which were so well marked. It would appear also that the portion of corrosive sublimate that had not been got rid of during the early period of vomiting, and which caused the poisoning, had either been dissolved and eliminated, or had been reduced to minute globules of mercury, which might escape observation, even with the aid of a pocket lens, at an ordinary post-mortem examination, however carefully conducted.

VII.—CASE OF PHOSPHORUS POISONING.

By Alex. J. Sinclair, M.D.

The following case may prove of interest as showing the prolonged latent period before the exhibition of fatal symptoms of poisoning by phosphorus:—

I was hastily summoned at 1.30 P.M. on a Monday of 1883 to the child of Mrs W. On my arrival I found the child suffering from severe clonic convulsions, trismus, and opisthotonus. A dark treacle-like fluid was occasionally vomited. The pulse was extremely rapid, but of fair volume; the cheeks presented a red, flushed appearance; eyes were preternaturally bright, with pupils somewhat contracted. The child was 22 months old, and had a healthy, plump appearance.

On inquiring from the relatives the apparent cause of these alarming symptoms, I was informed that the little patient had always been in the enjoyment of perfect health—was, in fact, a child with an unusual amount of animal strength and vigour.

On the Saturday previous, at 9 A.M., she partook of a hearty meal of porridge and milk, and at 11 A.M. was left sleeping in the bedroom. Three hours after she was found with mouth and lips covered with a red substance, which was seen to proceed from the heads of a number of matches lying beside her. The matches were of that variety called "Ruby," and are made by a firm of match manufacturers called "Bryant & May." The number computed to have been sucked were from one dozen and a half to two dozen. The white of an egg with flour was at once administered by the relatives, which caused white-coloured fumes to proceed from the mouth. Two teaspoonfuls of syrup of senna were administered, which acted freely in the evening, but nothing unusual was observed in the character of the motions. She went to bed apparently well, slept soundly, and partook of her ordinary food. On Sunday nothing unusual was observed beyond her body being somewhat cold and her having an abnormal thirst. The night was passed restlessly. At 8.30 A.M. her face was observed to become of a bluish-red colour and her body cold, but, being apparently quietly sleeping, she was not disturbed. At 12 noon a scream was heard, and on the relatives rushing into the room she was found unconscious, and in the state described in my previous context. She was placed in a warm bath pending my arrival without any appreciable benefit. The tetanic spasms occurred at intervals of five minutes. On my arrival I gave chloroform freely, with the effect of prolonging the interval. I then washed out the stomach, and gave ℥ss. turpentine injection. Shortly after this the convulsions ceased, and she sank into what seemed a deep sleep, breathing regularly and quietly. The pupils were somewhat more dilated. I then left her, and on again seeing her at 7.30 P.M. this deep sleep had continued. The extremities and whole surface of the body were warm. A bright flush remained on her cheeks. I had not been present twenty minutes when her lips and cheeks became suddenly blue, and after one or two sighs her respiration stopped, and simultaneously her heart ceased to beat.

The body remained warm for some hours after death. I may add that the evacuation produced by the enema showed no signs of phosphorescence, nor did the vomited matter, which consisted of altered blood from gastric mucous membrane. No post-mortem examination was permitted.

I find that each box contains one hundred matches, and is made with one grain of phosphorus. The amount taken was, therefore, under one-fourth of a grain.

VIII.—NOTES OF A CASE OF INTESTINAL OBSTRUCTION.

By JAMES MUNRO, M.D., Barnard Castle.

(*Read at the Newcastle Meeting of the North of England Branch of the British Medical Association.*)

INTESTINAL obstruction is a large subject, as it arises from so many causes and diseases, that when a medical man is called to a case of this nature nothing gives him more anxiety or perplexity—anxiety on account of its urgency and immediate danger usually, and perplexity by reason of the difficulty frequently in arriving at a correct differential diagnosis as early as possible, and on this will be based the treatment to be adopted, or whether it is a case for operative interference.

The previous history of the patient, the physical signs, urgency of the symptoms (excluding hernia), and palpation will, in many cases, enable us to arrive at a diagnosis or reasonable inference whether it is due to—

1. Internal strangulation from various causes.
2. Intussusception or invagination.
3. Ileus.

4. Constriction from various causes.
5. Compression from various causes.
6. Congenital malformations.
7. Implication of foreign bodies, or intestinal concretions, or gall-stones.
8. Impaction of fæcal masses, or, as it is designated by some authors, ileus paralyticus.

We must also bear in remembrance that some cases of enteritis and peritonitis at the outset present some features in common with intestinal obstruction.

There is at least one lesson we often learn from our experience of these cases, and we may lay it down as a general rule, that aperients, or certainly strong purgatives, increase the cause, and usually aggravate the suffering, and, generally, opiates or sedatives in some small measure relieve, and when it arises from certain causes, are beneficial. Frequently before we see the patient he has taken strong aperients, probably of different kinds, and as they have been of no avail, he becomes aware of what is the matter.

Without entering into more preliminary matter before introducing the case to your notice on which these notes are based, and which I thought it worth noting, from the great length of time the bowels were obstructed (twenty-six days), his being 70 years of age, his ultimate recovery, and having lived two and a half years afterwards; and also as a contrast to the successful surgical cases, for every case is not adapted for surgical interference, however brilliant and successful the operator, and fortunately surgery is increasing its domain in the abdominal cavity as well as in the chest in desperate cases, and often succeeds in these cases when medicine fails.

W. P., aged 70, a clergyman, of sallow complexion, weak, and not of active habits, often suffered from torpid bowels and disordered excreta, had an attack of so-called obstipation or ileus paralyticus, lasting seven days, ten days before this last bad attack supervened. It defied ordinary medical treatment, and yielded eventually to large injections of starch, with olive oil and turpentine, passed through the long elastic tube. After keeping moderately well for about a week, then commenced this long-continued attack, lasting from 22nd April 1882 to 18th May, a period of twenty-six days.

When I was called to him three days after the beginning of it, he had previously taken gray, powder calomel, aperient salines, and castor oil in large doses, and had several enemas administered to him, but all to no avail. He was vomiting and looking anxious; the abdomen was somewhat distended, but not tender; apparent fulness and hardness over the cæcum and ascending colon (no hernia to be detected), no fever, urine secreted fairly, no fæcal masses to be detected in the rectum or sigmoid flexure of the colon. I came to the conclusion that this attack was owing to the same cause as the previous one alluded to, viz., impaction of fæcal masses in the cæcum or colon, or ileus paralyticus, although possibly it might be due to internal stricture from organic disease, or compression of some part of the bowel. I therefore prescribed 10 grain doses of sulphate of magnesia with acids, and belladonna, and occasionally morphia was added, but this latter was chiefly administered subcutaneously at certain intervals. I directed him to take nothing internally, but sucking ice sometimes, and Brand's meat jelly or Valentine's meat juice, or a spoonful or two of milk, and heat to be applied to the abdomen. Injections were administered through the long elastic tube, but not a vestige of fæces appeared in any way. The above treatment was continued for a few days, and the patient was getting worse, and becoming very weak and exhausted, and the abdomen tympanitic, and stercoraceous vomiting occasionally; but the intellect kept pretty clear, and the tongue not very dry, no fever, and the pain was not great—only the skin was very dry, and prurigo was excessively troublesome. I therefore abandoned the aforesaid treatment, except morphia being administered sometimes hypodermically, and determined to give nux vomica and apply electricity to the abdomen night and morning. This system of treatment was persevered with for a week or so with no directly beneficial results, only the symptoms did not increase in urgency excepting the great wasting and tympanitis; the vomiting was not so frequent and less stercoraceous.

The patient got tired of this treatment, and was now reconciled to await his final passage over to the great majority, only fortunately the symptoms did not increase *pari passu* with the length of time. His temperature was always subnormal, usually from 2 to 4 degrees, and there was no albumen or sugar in the urine. We still persevered with occasional doses of morphia subcutaneously, and also administered sometimes injections of starch, olive oil, and turpentine, and at this time flatus was beginning to move more in the bowels; and at the end of the twenty-sixth day of the bowels ceasing to act, after a pretty large enema (administered through the long elastic tube) slight action resulted, and some hours after this free and copious action, and ultimately slight diarrhœa.

The patient behaved with great fortitude and resignation, and understood the nature of his case, and did not swallow any more liquid than he could possibly help, so as not to increase the vomiting unnecessarily (often only washing his mouth without swallowing), as well as the distension of the abdomen, which was ultimately very great. He was reduced to a skeleton nearly, but in a few weeks he regained comparative health and strength, and lived for two and a half years afterwards; and here is another record of the conservative powers of the organism, and of the *Vis Medicatrix Naturæ.*

IX.—THE ETIOLOGY AND PATHOLOGY OF HYDRAMNIOS, WITH ITS RELATION TO CERTAIN FŒTAL DEFORMITIES.

By JOHN PHILLIPS, B.A., M.B. (Cantab.,) M.R.C.P., Physician to the British Lying-In Hospital.

THE first question which naturally meets us on the threshold of our inquiry is this, What is hydramnios? Hydramnios is an excessive accumulation of amniotic fluid in the cavity of the amnion. The difficulty lies in assigning the limit in amount between morbid and normal secretion.

The leading authors allow that at term the usual quantity of amniotic liquid does not exceed a litre and a half (about 2 pints 12 ounces). Fehling[1] found the amount of fluid was much less than is generally supposed, being about 20 ounces in the tenth month, and 16 for the ninth month; while M'Clintock[2] thought as a rule, the amount is rarely in excess of from 6 to 8 ounces, which seems an extremely low estimate. He does not include, however, any in his category except those in excess of 2 quarts. Tarnier[3] is of opinion that the liquid is scanty at the commencement of gestation, but after the second month it increases in a marked manner. The weights of the fœtus and that of the liquid are about equal towards the middle of pregnancy, but after that period the weight of the fœtus is greater, and becomes at term five or six times more than that of the amniotic liquid. Although the liquor amnii increases absolutely up to the end of pregnancy, relatively to the fœtus it increases in the first half and diminishes in the second half of pregnancy.

Baudelocque, Playfair, and others think that the quantity of the amniotic fluid increases regularly up to the end of pregnancy, but Carl Braun avers that at the seventh month it is double that at the moment of labour; while Campana and Litzmann maintain that it reaches its maximum at the fifth or sixth month, and that at the end of pregnancy it is reduced almost by half.

The extreme limits drawn by M'Clintock point to the difficulty which meets us at the outset, and I think the term ought to be more of a relative one; by that I mean a quantity which in one woman would be normal, and perhaps habitual, might in similar quantity produce all the serious symptoms of hydramnios in another. Although rather an unusually high estimate, 2 quarts will suffice as a rough indication of where health ceases and disease begins.

The subject is a large one, and I have found it necessary to strictly adhere to the title chosen. Any allusion to the symptoms, diagnosis, or treatment of this disease will therefore be entirely omitted. My paper may be conveniently considered under two heads:—

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[1] Gyn. Secn., German Congress of Physicians, Sept. 1877.

[2] *Clinical Lectures on Diseases of Women*, 1863, p. 376.

[3] *Traité de l'art des accouchements*. Paris.

(A.) The etiology and pathology of the disorder, including the various theories as to the formation of the amniotic fluid; for it seems to me that if one can verify the source of the liquor amnii it will be easier to understand why it is sometimes excessive in amount.

(B.) The relation of the excessive secretion to certain fœtal deformities.

To begin *ab initio*, let me first recall to mind the development of the amnion, which is of great importance.[1] Shortly after the splitting of the mesoblastic layer and the formation of a pleuroperitoneal cavity, there arises in front of the head a fold consisting of epiblast and mesoblast, the latter being very thin. Later a similar fold appears at the tail, similarly constituted. These extend upwards, and gradually meet over the embryo; the cavity between the reflected epiblast and the fœtal body is the amniotic sac; during the earlier months of pregnancy the amnion is closely adherent to the fœtus.

The amnion is thus formed of two layers—an inner, derived from epiblast, consisting of distinct nucleated cells, and an outer, derived from mesoblast, being made up of a fibrous material, and attached by a layer of connective tissue to the subjacent chorion.

A difficulty which meets us early is that the composition of the fluid is very liable to variation at the different months of pregnancy. From an analysis by Rees,[2] in a case in which labour was induced at seven and a half months, the fluid was found to be alkaline, with a specific gravity of 1008·6, the solid constituents amounting to 16·6. Bostock made an almost similar analysis. Buniva and Vauquelin found its specific gravity 1004, and the solid constituents 11 or 12 in 1000. Vogt, of Bern, says that at six months the solid constituent is 9·71, while at three and a half months it amounts to as much as 20·55 in 1000. Fehling[3] thought the solid constituents formed 11 to 13 parts in 1000. The urea amounted to ·03 or ·04 per cent. This he did not find increase with the weight of the fœtus. A certain amount of urea could be discovered in the maternal blood, but not sufficient to account for that in the fluid. One point I wish to draw attention to, and that is the invariable presence of urea, or a substance which at present cannot be distinguished from it. Occasionally, in addition, we find epithelial scales and meconium in the fluid.

The theories which have been broached as to the cause of the disease, it is needless to say, are numerous in the extreme, some being of the wildest and vaguest description. The fluid was supposed to derive its origin from the mammary glands by Bohn, from the

[1] *Elements of Embryology* (Foster & Balfour), Part i.

[2] *Medical Gazette*, 1838–39, p. 461.

[3] *Loc. cit.*

salivary glands by Lister, while it has even been regarded as due to the lachrymal secretion of the fœtus. Wharton with more foundation considered it as arising from the gelatinous matter of the umbilical cord.

In 1795 Bosch[1] propounded the theory that the amniotic fluid was the secretion of the amniotic vessels, and in 1800 Scheel[2] adopted a similar view, but Deusing thought it arose from fœtal urinary secretion. Meckel also was of opinion that, during the latter period of pregnancy, the fluid ought to be a product of the fœtus. Mercier,[3] in his essay on the subject in 1809, mentions three cases, and from the appearances observed he thought that the inordinate secretion was invariably due to inflammation of the amnion. This appears to be the first attempt at determining the pathology of the disease accurately. Robert Lee[4] considered it, when unconnected with a dropsical diathesis in the mother, as merely one of the numerous diseases of the fœtus in utero, which arise independently of any constitutional disorder in the parents.

The various views at present held can be divided into three classes:—

(*α*) That the amniotic fluid is a product of fœtal origin (Sallinger and others).

(*β*) That it is the product of the maternal organism (Ahlfeld, Scanzoni, Schroeder).

(*γ*) That it is a common product of maternal and fœtal origin (Virchow).

Now let us take the first class. Here, again, various observers have attributed to various parts of the fœtus the origin of the fluid:—

(1.) That the amniotic fluid is due to urinary secretion and its secretion into the amniotic cavity (Gusserow).[5]

(2.) That it is a secretion of the skin (Scherer),[6] or of the skin and kidneys combined (Schatz).[7]

(3.) That it is a transudation of the liquid parts of the fœtal blood across the amniotic membrane (Jungbluth and others).[8]

(4.) That it is a secretion peculiar to the amnion (Mercier).[9]

I must now consider *seriatim* the arguments upheld for each supposed case. Dohrn[10] is a strong supporter of Gusserow's theory. He catheterized thirty-nine boys immediately after birth, and found urine in the bladder twenty-four times, or 61 per cent. He also catheterized thirty-six girls in the same way, and found urine in the bladder twenty-eight times, or 77 per cent., making a mean percentage of 69.

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[1] *Sylloge operum minorum præstantiorum ad artem obstetriciam*, etc. (Schlegel).

[2] *Über Beschaffenheit und Nutzen der Fruchtwasser*, etc.

[3] "Observatio de Acuto amniosis Hydrope," etc. *Journ. Gen. de Med.*, vols. xliii. and xlv.

[4] *Medical Gazette*, 1830, vol. vii. p. 385.

[5] "Zur Lehre vom Stoffwechsel des Fœtus." *Archiv f. Gynak.*, Bd. iii. p. 241.

[6] *Verhandlungen der Physiolog. medicinish. Gesellschaft.* Wurzburg. 1852.

[7] *Verhandlungen des Gynak. Versamm. zu Berlin*, 19th Sept. 1874.

[8] *Archiv für Gynak.*, 1872, Bd. iv. p. 554.

[9] *Loc. cit.*

[10] *Monatschrift für Gebürtskunde*, 1867, xxix. p. 105.

Although his paper is excessively meagre, yet it seems impossible to maintain that the quantities of urine found in the bladder had been produced during labour. Cases of hydronephrosis have been found where there has been an impermeable meatus, showing that renal secretion must have been going on during intrauterine life. Rindfleisch[1] records a well-known case, and quite recently Simpson[2] has published the history of an almost similar one. Vernois[3] so early as 1837 discovered renal infarcts in the kidney tissue. Fehling, Gusserow, Zweifel, and Benicke have endeavoured to prove this theory experimentally. Chemical matters, such as indigo, were introduced into the fœtus, indirectly through the mother's blood, or directly by hypodermic injection into its own body, and it was thought by these observers that they were secreted by the kidneys. This is open to considerable doubt, and the whole matter must still be considered *sub judice.*

(2.) Prochownick[4] studied the amniotic fluid from a chemical point of view. He considered it as entirely emanating from the fœtus, being the product of the interchange of the nutritive fœtal materials. The secretion by the skin commences from the early months of pregnancy; that of the kidneys, which is made in a regular and abundant manner, only a little before the beginning of the second half of the pregnancy. The concentration of the amniotic liquid always increases in the first half of the pregnant condition, diminishes rapidly towards the middle, and continues about the same in the last month. He has also proved that the amniotic liquid contains urea from the sixth week, and that the amount of urea for the last three months of pregnancy is proportional to the length and weight of the fœtus.

From an embryonic point of view we know that the primordial kidneys begin to be formed together with the allantois at a very early period, about the third week, and are quite distinct in the fourth week. During the seventh and eighth they are rapidly diminishing in size. The above theory is therefore quite tenable; indeed, Wiener[5] says that at first the liquor amnii is derived from the skin of the embryo; after the fourth week the Wolffian bodies begin to supply a secretion which escapes into the amniotic sac. It is therefore kept distended, firstly by the activity of the primordial kidneys, and afterwards by the fully developed organs.

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[1] Virchow's *Archiv*, Bd. lxxxi. S. 521.

[2] *Edin. Med. and Surg. Journal*, 1882–3, p. 35.

[3] *Etudes phy. et cliniques des bruits des artères.* Thèse. Paris, 1837, p. 137.

[4] *Archiv für Gynak.*, Bd. xi. pp. 304 and 561.

[5] "Uber die Herkunft des Fruchtwassers," *Archiv für Gynak.*, Bd. xvii. Hft. 1, p. 24.

Sallinger[1] quite agrees with the two preceding observers that the fluid proceeds exclusively from the fœtus, but argues that while it is at the commencement of pregnancy the skin of the fœtus acts, later the cord and vessels of the placenta take part in its production, and only during the last portion do the urinary products mix with it in more or less quantity.

In the earlier days of pregnancy the amnion is adherent to the fœtus, being slightly separated from the chorion by a very thin layer of fluid. Very gradually the amnion becomes filled, and approaches the chorion, to be fused with it later on; hence at the time when the amnion has no connexion with the internal surface of the uterus the liquid which fills its cavity *can* only proceed from the skin of the fœtus. Later, when the placenta is formed, the amnion united to the chorion, and the lymph channels are formed between these two membranes, a transudation from the internal surface of the placenta *to* the cavity of the ovum becomes possible, and is effectively produced, while the fœtal skin secretes less and less. Schatz, on the contrary, has held that it is in the second half of intrauterine life that the skin has the greatest influence on the formation of the amniotic fluid.

It is worthy of note that pemphigus has been found as the only pathological condition in connexion with this disease in some cases, while Budin relates a case in which the fœtal skin was covered with nævi, and another in which it presented peculiar redundant folds. These lesions point to some obscure relation between the two.

(3.) We now come to the third, and, to my mind, the most important question as to the origin of the liquor amnii. Is it a transudation of the liquid parts of the fœtal blood across the amniotic membrane?

Monro, by injecting warm water into the umbilical arteries, has seen the liquid exude on the internal surface of the amnion. Lobstein[2] corroborates this statement, and mentions certain small vessels which can be found between the amnion and the superficial surface of the placenta. Jungbluth[3] discovered in the most superficial placental layers, nearest the amnion, fine capillary networks, which anastomose with the umbilical vessels. These he called the vasa propria, being almost anticipated a century before by De Muralt. The vessels are applied close to the amnion, and always, or nearly always, are obliterated in the later months of pregnancy.

Winkler[4] has denied the existence of this capillary network, and argues that if we admit Jungbluth's theory we must also allow the relation between the existence of these capillaries and the production of the amniotic fluid, and in consequence the relation between the *persistence* of the vasa propria and the production of the hydramnios. In support, however, of this theory we have the experiments of Levison,[1] who found that, after injections of prussian blue gelatine into the umbilical vessels of the cord, in children born before term, the vasa propria were notably developed. On the contrary, in the placenta of infants at term, of which the mother did *not* present hydramnios, there was an absence of these capillaries. Finally, in cases of hydramnios, either before or at term, there was found an abundant development of them.

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[1] *Ueber Hydramnios im Zusamm. mit der Enstehung des Fruchtwassers*, D. 1. Zurich, 1875.

[2] *Nutrition du fœtus*. Thèse. 1804.

[3] *Beitr. z. Lehre vom Fruchtwasser*, D. 1, Bonn, 1869. Virchow's *Archiv*, Bd. xlviii., p. 523.

[4] *Archiv für Gynak.*, 1872, Hft. 2, p. 238.

Gassner[2] is of opinion that before the formation of the placenta the amniotic fluid is supplied by the vasa propria of Jungbluth and endosmosis, while after the obliteration of this network the kidneys of the fœtus assume their functions. The secretion of the amniotic fluid is probably due to the resistance the fœtal circulation meets in the placenta or cord; the greater these resistances the greater the secretion or hydramnios. Clinical observations show that very frequently obstacles of the fœtal circulation are the causes of the hydramnios, these obstructions being met with in the placenta, cord, umbilical ring, or liver of the fœtus, or even in the course of the veins which bring blood to the fœtus. This theory is supported by an observation of Frankenhauser. In a case of twin pregnancy one twin and membranes were normal, the other consisted of a very œdematous fœtus in hydramnios. This condition was probably due primarily to the obliteration of the urethra, causing an enormous distention of the bladder, which produced pressure on the vein at the level of the umbilical ring. From numerous experiments, too lengthy to detail, the following laws may be laid down:—

1. That, under a certain pressure, the liquid parts contained in the umbilical vein and its branches can transude into the amniotic cavity.
2. That, under an equal pressure, liquids do *not* transude across the walls of the umbilical arteries.
3. If, in consequence of an obstacle in the circulation, the tension of the blood in the umbilical vein is increased, the exosmosis will be abundant, and will give rise to hydramnios.
4. In consequence of the congestion of the umbilical vein, the venous channels which spread on the fœtal surface of the placenta are dilated, and, proportionately with the increase of these vessels the exosmosis is the more abundant. But this vascular modification is subordinate to the existence of an obstacle to the venous circulation, and is *not* the primitive cause of the hydramnios.

Now, the ways in which the liquid can escape by exosmosis are two in number. (*a*) By the cord.[3] (β) By the amnion. The epithelium which covers the cord is stratified, and may occur in from three to five layers; it appears to be the continuation of the mucous layer of Malpighi of the skin. The epithelium of the amnion is pavement in character, and undergoes the change at the insertion of the cord into the placenta; it is not of a glandular nature. Winkler describes lymphatic channels, persisting beyond the vasa propria, which traverse the cellular and gelatinous layers of the chorion and the amnion, breaking up the epithelium of the latter, so that they open freely into the cavity of the ovum, like the lymphatic channels on the serous surface of the diaphragm. These channels constitute passages on which liquids can easily move, and, like the network of Jungbluth, can be considered as one of the means of producing hydramnios; the openings of the system are lacunar, and are situated among the cells of the amnion.[1]

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[1] *Archiv für Gynak.*, Bd. ix. p. 517 ("Fruchtwasser und Hydramnios").
[2] *Monatschrift für Geburt.*, 1862, Bd. xix. Hft. 1 and 2.
[3] Whittaker, *Amer. Journal Obstet.*, vol. iii., 1870–71, p. 291.

(4.) I now come to the fourth sub-class. Is the amniotic fluid due to secretion of the amnion, and hence is hydramnios only a perverted secretion? Mercier's views have already been given (p. 806). Burns[2] says it has been looked upon as the result of inflammation of the amnion. He also adds, "This disease may be complicated with alterations of the placenta, which may also exist without it. In some cases we have cysts formed in the placenta, or more solid tumours, or induration, or wasting, or shrivelling of the part, whilst the rest is healthy." Priestley and others hold that it is a serous membrane, and acts as such, and that in cases of hydramnios it is found thickened, opaque, and otherwise altered. Instances certainly do occur where no other pathological lesion can be found, and we must perforce admit some portion of this theory as correct. Having concluded the chief arguments in favour of hydramnios being the result of fœtal disturbance, I now come to the second question,—

(β) Can the amniotic fluid be considered a product of the maternal organism?

Ahlfeld[3] says it can; he seeks the cause in the modification of pressure which the uterus undergoes in the progress of pregnancy. In consequence of the eccentric hypertrophy of the uterus the internal pressure which it sustains (from the position of its contents) is inferior to the abdominal pressure, and, as its orifice is closed by a mucous plug, the serum ought necessarily to pass from the maternal blood into the uterine cavity.

This negative pressure (an exact counterpart of what takes place in the large veins of the thorax during inspiration) goes on diminishing up to the third month of pregnancy, when it ceases. The bloodvessels which furnish the amniotic liquid are those of the decidua reflexa. Leopold admits the above theory for the early months of pregnancy, but thinks that later the decidua vera furnish the amniotic fluid.

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[1] Dohrn, *Monatschrift f. Geburt.*, 1865, xxvi. p. 114.

[2] *Midwifery*, 1837, p. 271.

[3] "Ueber die Genese des Fruchtwassers," *Archiv für Gynak.*, Bd. xiii. pp. 160 and 241.

The above theory appears most ingenious, and for the earlier months of pregnancy I can only find one fact which in any way invalidates its worth, and that is that Teuffel[1] has recently described a case of hydramnios in an *extrauterine* pregnancy. Post-mortem, the cyst was found to contain a full-term macerated child and several litres of amniotic fluid.[2]

(γ) Virchow considered the exudation from the skin glands as most unlikely. He thought the amniotic liquid a composite product, of which the fœtal portion is due partly to the vernix caseosa, partly to the renal secretion. The other part would be essentially maternal transudation.

(To be continued.)

X.—REMOVAL OF THE UTERINE APPENDAGES FOR DISEASE, WITH TWENTY-THREE CASES.

By SKENE KEITH, M.B., C.M., F.R.C.S.E., Assistant-Surgeon for Ovarian Diseases, Royal Infirmary, Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, 19*th January* 1887.)

FOR many years certain diseased conditions of the female pelvic organs have been known under the names of chronic cellulitis and chronic ovaritis, and have been treated by the application of blisters and nitrate of silver, with little permanent benefit to the patients; but, if we are to believe Dr Clifford Albutt, with golden benefits to the gynæcologists. Now, in addition to these old names and diseases, new pathological conditions have been recognised; or it would, perhaps, be more correct to say that a part of the body, hitherto thought little of, has been found to be sometimes the seat of grave and distressing diseases. Distension of the Fallopian tubes has been known for many years, but as a simple dropsy of these tubes seldom leads to disturbance, no importance was attached until lately to this part of woman. In late years it has become the fashion amongst a certain class of practitioners to lay far too great stress on the condition of the so-called uterine appendages, and to at once advise their removal when they are felt to be abnormal, or even indeed when they are not abnormal, but when, if the patient's statement is believed, they ought to be in a diseased condition.

The cause of this unfortunate state of affairs is twofold. In the first place, many of the gentlemen who remove ovaries either do not know what can be done by Nature, assisted by suitable local and general treatment, to clear up and dissipate pelvic troubles, or because they are too impatient, and do not allow the *vis medicatrix naturæ* more than a few weeks to cure an ailment which may have been progressing slowly for several years. And, in the second place, the old dread of the peritoneum has been replaced by a confidence so great, that one abdominal surgeon has said that it is as safe to open the abdomen as to open one's pocket; and many have lauded the advice which has been given, to make a diagnosis after the abdomen has been opened.

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[1] *Archiv für Gynak.*, 1884, xxii. p. 57.

[2] An unpublished essay "On Scanty Secretion of the Liquor Amnii in the Early Months of Pregnancy," by Dr M. Handfield-Jones, has an important bearing on this point.

Clinically, the various conditions for which removal of the uterine appendages may be required can be divided into—1st, Slight cystic enlargement of the ovaries, where the growths are enclosed in the folds of the broad ligaments, and which can scarcely be dignified by the name of ovarian tumours; 2nd, Salpingitis, hydro-, pyo-, and hæmato-salpinx, giving rise to symptoms, and where there is no other disease to account for the condition of the patient; 3rd, Where the uterine appendages have become compressed and bound down by adhesions; 4th, A combination of these three conditions along with a varicose state of the bloodvessels of the broad ligaments. The last is the most common. Under no circumstances is the operation to be performed for neuralgia, or unless disease is distinctly made out on examination.

A large part of the profession has not yet recognised these lately discovered diseases, and a still larger proportion will not entertain the idea of any but the old methods of treatment. This is not to be wondered at; for, like every new thing, this latest method of treatment by operation, or mutilation as it is often called, has been pushed too far, and ovaries have had to go which might quite well have been left alone. The symptoms of these diseases are also very diverse, and do not give any positive or definite information. You may have increased amount of the menstrual flow, or you may have a lessened amount; you may and generally do see emaciation, yet, on the other hand, the patient may be gaining weight; there may be leucorrhœa, or there may be no leucorrhœa; and even the only symptom which is never absent—pain—may give little information, for it may be worst before, during, or after menstruation, or even most severe between the periods. Its situation also varies, sometimes on the left side, sometimes on the right, or it may be worst in the back or across the front of the abdomen. The physical examination also is not easy, for there is always more or less tenderness; and it must be borne in mind that a distended Fallopian tube, or an ovary distended with pus, may be ruptured by rough handling. The only certain diagnosis is, however, to be made either and usually with the finger in the vagina—and I may remark that one finger is more likely to make it than two; or by the combined internal and external examination. It is not very difficult to feel a healthy Fallopian tube when examining a moderately thin patient; a healthy ovary, on the other hand, when in its natural position, is situated so close to the wall of the pelvis, partially protected by the brim, that it can rarely be reached. An enlarged ovary can always be felt, as it is then altered in position.

When a distended Fallopian tube or diseased ovary, which is making life a burden to the woman, has been distinctly made out, and when the patient has been properly treated for chronic inflammatory disease in the pelvis, and is not any better for it, one of two things ought to be done: either leave the case alone, or remove the disease. The one exception to this rule, if exception it be, is when the patient has not been long married, and when the painful condition is believed to be kept up by too frequent intercourse. Here complete sexual rest for many months must be tried, along with general treatment, and followed, if a cure result, by increase of knowledge on things in general on the part of the husband.

Whether operative treatment is ever to be advised or not, must depend—1st, on the mortality following operation; 2nd, on the benefits to be derived from operation; and 3rd, on the drawbacks which follow operation. As the diseased condition of which we are treating seldom shortens life, a small mortality is absolutely essential. Sir James Paget has, I believe, said that a death-rate of 4 per cent. is too much for this operation; on the other hand, Dr Greig Smith, in a recent paper, has stated that the average operator will have a mortality of 8 per cent. If this latter statement be correct, the operation must be condemned, or the average operator must leave it alone. What the benefits which are to be derived from operative treatment are, we have at present not much reliable knowledge, beyond the meagre statement that the patients were cured, or, in other words, did not die, for these terms seem nowadays to be almost synonymous. To clear up this want of knowledge, at least in a small degree, has been my object in writing this paper, and I have given below the exact state of every case, twenty-three in number, I have operated on up to six months ago. The drawbacks to the operation are,—first, the convalescence is very slow; and, second, there is the idea that the patients are unsexed. The woman who has disorganized ovaries or occluded Fallopian tubes is already nearly as much unsexed as if these diseased parts had been removed. Nevertheless, it is absolutely essential that the patient be told that she will have no children. Husbands naturally wish to know how the operation will affect them. This most important question cannot be definitely answered, for I have been told by a woman, after her ovaries had been removed, that sexual relations, which had been impossible on account of pain, had been renewed, but that all desire had been lost. Two others have lost it, another remains as before, and in two cases of hysterectomy there has been little change, except that one has become more amorous, and this woman has not a morsel of uterus, ovaries, or Fallopian tubes. The Inquiry Committee appointed by the Liverpool Institute, *re* "Hospital for Women," makes this statement:—"A considerable proportion averred that they had suffered a distinct loss of sexual feeling, to such an extent as to cause serious domestic unhappiness in not a few instances." I know of another similar case.

Menstruation does not, I believe, recur when the whole of the ovarian tissue has been removed. When writing lately of the removal of the ovaries and tubes, a well-known London physician said, "The women had no disease, and they were cured." Surely on this question he has taken up an extreme position, forgetting that all extremes are errors.

It is difficult to give any idea of how often the operation is to be recommended. During the first year that my father and I began to operate on any but actually bed-ridden patients, we performed the operation twenty-four times. In the next six months not half-a-dozen women have required the operation. In fact, the supply had been almost exhausted by less than thirty operations. This fact makes one wonder at the numbers of diseased ovaries and tubes there appear to be in some parts of this country.

The operation itself may be very easy, or it may be very difficult. In a large majority of cases an incision long enough to admit two fingers into the abdominal cavity is sufficient, and no one who has not the manual dexterity to be able to remove the ovaries and Fallopian tubes through such an incision ought to attempt the operation. The fingers are passed down to the uterus, and along the broad ligament until the ovary, situated usually deep down in the pelvis, is reached. It is best to attack the one which is known to be least adherent first, so as to raise the whole pelvic floor, and thus bring the more difficult one more easily within reach. The ovary and tube are drawn outside the abdomen either by the fingers or by forceps; a double silk thread is passed through the broad ligament as far away from the ovary as possible, and is tied. The entire ovary is then cut away, care being taken to remove every morsel of it. Slight adhesions are easily broken down by the fingers; but when the appendages are embedded in a mass of adhesions, it is often most difficult to separate them, and, more especially, to know where to begin the separation. Bleeding is to be arrested by ligatures, by pressure, or by perchloride of iron, or occasionally a drainage-tube has to be left in, and the hæmorrhage will be found to gradually lessen, if no large vessel has been left without a ligature. The immediate after-history of the cases does not vary from that of a double ovariotomy. There is a discharge of blood from the uterus on the second, third, or fourth day, sometimes accompanied by considerable nervous disturbance. Hegar advises that the bowels be moved early, so as to prevent adhesion, and I can see no objection to this plan. There will be often a recurrence of the old pains at the date of the "periods," and it is as well not to allow the patient to sit up until after the first one be past, and to warn her to be careful when the next ones become due.

Case I.—L. S., age 28, had suffered from dysmenorrhœa since the age of 14. Her present illness followed the birth of her only child twenty-eight months ago. Since then she has been unable to work, and has had four attacks of pelvic cellulitis, each of which kept her in bed for over a month. On one of these occasions I felt the uterus absolutely fixed by the surrounding swelling. She suffered from constant pain in both groins, bearing down, and pains in the back, all aggravated before and during menstruation. She has also menorrhagia and a profuse leucorrhœa, and is a martyr to facial neuralgia. She has not lost flesh. Operation on 10th August 1885. Dr Blair, of Shotts, wrote to say that he regretted that he was not able to be present at the operation, as he was anxious to see the last of the case, as it had been a constant trouble and anxiety to him for more than two years. Ovaries enlarged, and the tubes hard and slightly dilated; no adhesions. On 4th October the patient wrote to say that she was better than she had been for four years. *December* 1886.—Is in perfect health, and able to do anything, although she has had one severe hæmorrhage from the uterus, and three slight ones.

Case II.—Mrs N., aged 40, miscarried at the fifth month, nearly two years before operation, and as soon as she got out of bed felt severe pain in the left groin and across the abdomen. The pain has never left her, is aggravated before and during menstruation, and the general condition is much reduced. The tubes were easily felt to be enlarged and hard, and were removed on 25th August 1885. There were no adhesions. Slight cellulitis followed the operation; but when the woman went home at the end of five weeks she felt "quite different." *December* 1886.—She has no pain, and is well.

Case III.—Mrs L., aged 37, had suffered for nine years from pain in the back, in both groins, and from cramps and pains in the thighs, worst for a week before menstruation. She had had nearly a dozen doctors to see her at one time or another, and had spent most of the last two years in bed. On the 29th August 1885 the ovaries were removed with difficulty on account of pelvic adhesions; they were large, and the tubes were remarkably hard. Six weeks after the operation she said that her sight and memory were improving, that she was entirely free from pain, and that she felt her mind stronger. *November* 1886.—Perfectly well.

Case IV.—Mrs G., age 34, had been slowly getting weaker for five years since the birth of her fifth child, and now says that, except that she is alive, she is of no use. She has pelvic pains, but these are bearable. Menstruation is profuse. On the 2nd September 1885 I removed the ovaries; the right ovary and tube were much enlarged, and had been easily felt before operation. They were adherent to the omentum and in the pelvis; the left ovary and tube were removed, though they were healthy. After going home to Glasgow convalescence was retarded by an attack of acute nephritis. In the beginning of May 1886 she felt well, but not very strong. On 13th July she spent a long day in the Exhibition, and, as she is still as well as she was then, I think she may safely be said to have made a complete recovery.

Case V.—Miss L. B., age 31, looking wan and thin, was unable to say how her illness began, but had suffered from pains in both groins and in the back, and from leucorrhœa, for fully seven years. A large swelling was to be felt behind the uterus on the left side, and a smaller one on the right. On 3rd September 1885, the right ovary and tube were found to be enlarged and adherent; the left ovary had been transformed into a thick walled cyst almost as large as a billiard ball. The operation was followed by slight phlegmasia dolens, causing stiffness of the leg for some months. In November 1886 she was in magnificent health.

Case VI.—Mrs C., age 35, dated her illness to the birth of her last child six years ago. She suffered from constant pain in both groins, which was worst for two days before and for the first two days of the menstrual flow, and from great and increasing debility. She was much emaciated, and her friends told me that they noticed her becoming thinner almost day by day. Greatly distended Fallopian tubes were to be felt. Operation on 12th September 1885. The right tube was filled with serum, and was as large as a distended small intestine; the left ovary and tube were matted together into a mass nearly as large as a hen's egg. There were pelvic and omental adhesions. In December 1886 the woman was quite well.

Case VII.—Mrs G., age 41, suffered from pain in the left groin for fifteen years. For the last two years she has been unable to work, and has been as long as five months in bed at a time. There is menorrhagia, and the pain is worst at the end of the flow. The uterus was large and retroverted, and the left ovary was enlarged. *30th September* 1885.—Appendages removed, pelvic adhesions; left ovary had become transformed into a single cyst; the right was large, and the tubes were healthy. She was very weak, and on the second day the temperature was 103°, pulse 140, and respirations only 10, and after several ups and downs she got home in two months. In January 1886 she wrote to say that she was well; in March she was worse; then in April she was better. Now, fifteen months after the operation, Mrs G. is little, though certainly a little better than she was before.

(To be continued.)

XI.—CASE OF OPHTHALMOPLEGIA EXTERNA ACUTA, PROBABLY DUE TO A SCROFULOUS LESION OF THE PONS VAROLII; RECOVERY.

By George A. Berry, M.B., F.R.C.S. Edin., Ophthalmic Surgeon to the Edinburgh Royal Infirmary; and Byrom Bramwell, M.D., F.R.C.P. Edin., Assistant-Physician to the Edinburgh Royal Infirmary.

The following is a conjoint report by Drs Berry and Byrom Bramwell of a case of great rarity and interest:—

Annie B., æt. 2½, was brought to Dr Berry at the Edinburgh Royal Infirmary on 15th March 1886, and was seen by Dr Byrom Bramwell on 21st March.

Previous History.—Until five months ago the patient enjoyed excellent health; she then had a severe attack of gastro-intestinal catarrh, which was characterized by vomiting and diarrhœa, and some pain in the abdomen. She was much pulled down by this illness, which lasted three weeks, but gradually recovered, and remained perfectly well until the commencement of the present attack.

Three weeks before she was brought to the Infirmary she began to cough, and complained of headache. The pain was severe, and was located in the back of the head on the right side. It continued for several days, then entirely disappeared, and has not since been complained of.

About ten days ago her mother noticed, on taking her out of bed one morning, that she looked stupid, that her eyelids drooped, and that "there seemed to be something wrong with her sight." Her mother is certain that the eyes were quite right when she put the child to bed the night before.

Present Condition.—When seen at the Infirmary on 15th March 1886, the eye condition was as follows:—Almost complete ptosis in both eyes, the lids being mainly raised to the level of the pupils by the action of the occipito-frontales muscles. Absolute loss of power of raising both eyes, and almost complete loss of the power of depressing them. The internal rectus of the right eye was absolutely, and that of the left almost completely, paralyzed. The eyes stood in the position of absolute divergence. The right eye was used for fixation; but on covering the right, the patient was able to fix with the left. The pupils, which were 4 to 5 mm. in diameter, contracted well to light. There were no ophthalmoscopic changes. Dr Berry's diagnosis was paralysis of the third and fourth nerves (branches to the oculo-motor muscles), and paresis of the sixth, *i.e.*, almost complete ophthalmoplegia externa.

On 21*st March* the ocular condition was unchanged. The patient looked and was markedly stupid and apathetic—in fact, almost idiotic. (See Fig. 1, in which the ptosis, the contraction of the occipito-frontales muscles, the divergence of the eyeballs, and the stupid, apathetic expression, are admirably shown.)

Her mother stated that she would sit still without taking the least notice of anything which was going on around her, while before this attack commenced she used to be a particularly bright, active, and intelligent child; that she was always drowsy, and would sleep almost continually, both day and night, if left to herself; for ten days there had been no headache, and the child had not vomited since the present symptoms commenced. Last night she was seized during her sleep with a screaming fit; it came on without any apparent cause, and lasted half an hour. During the attack the hands were clenched, but the child made no complaint of pain. The patient could stand, and walk, and use her hands if urged to do so; but all her movements were slow and hesitating. She seemed to have lost all spontaneity, but (except in the ocular muscles) there was no localized paralysis.

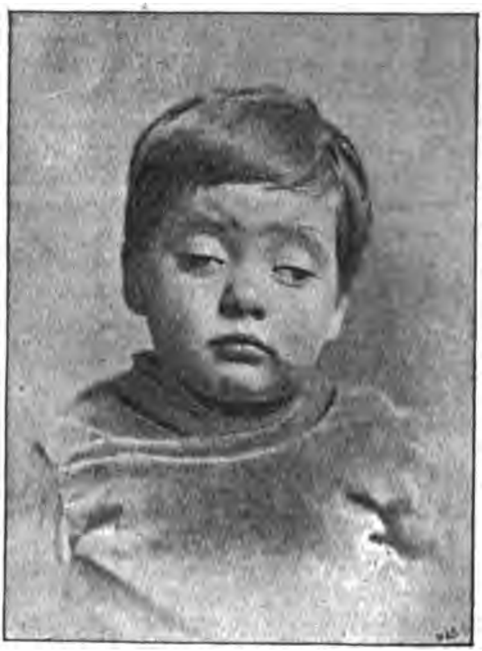

FIG. 1.—*Photograph of Annie B.—Case of Ophthalmoplegia Externa Acuta, showing the Facial Appearance at the height of the Lesion.*

The divergence of the eyeballs, the ptosis, the compensatory contraction of the occipito-frontales muscles, and the markedly stupid apathetic expression of countenance, are admirably shown.

The knee-jerk could not be obtained in either leg, and the plantar reflex was with difficulty elicited. Urination was performed naturally; the bowels were constipated. It was impossible to test the sensory functions with any degree of delicacy, but there did not appear to be any marked derangement either of the sensibility of the skin or of the special senses other than could be accounted for by the general apathetic and drowsy condition of the patient. The appetite was voracious. The mother stated that the child would eat anything and everything which was given to it, and that it never seemed to be satisfied. The temperature was normal, the pulse 68. Fine bronchial râles were audible over the greater part of both lungs, but there was no dulness or other evidence of localized disease (*e.g.* tubercle). The abdominal organs appeared to be healthy.

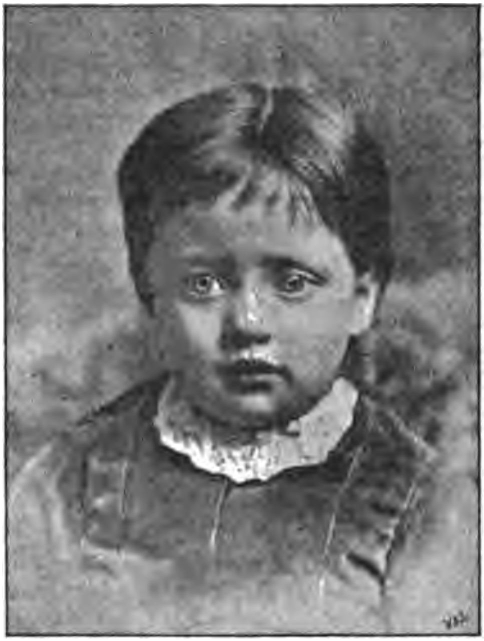

FIG. 2.—***Photograph of Annie B.—Case of Ophthalmoplegia Externa Acuta, showing the Appearance on Recovery.***

This Photograph was taken six months after that represented in Figure 1. The expression is now bright and intelligent, and all paralytic symptoms have disappeared.

The Family History was unimportant. The father and mother were both alive and healthy; there had been seven children and one miscarriage; one boy had died at the age of six years of what was said to have been inflammation of the bladder; the eldest girl had always been delicate; the other children were healthy. There was no distinct evidence of hereditary syphilis nor of tubercle.

Diagnosis.—For the reasons which will be afterwards detailed, it was concluded that there was a localized lesion in the upper part of the pons Varolii; and it was thought probable that the lesion was tubercular in character.

Treatment.—Iodide of potassium, at first in 3, and afterwards in 5 grain doses, was prescribed three times daily.

Subsequent Progress of the Case.—For two or three weeks there was little alteration; distinct improvement then commenced; and on *5th May* the paralytic condition of the ocular muscles had distinctly improved; the expression was less vacant; the mental condition decidedly brighter; the cough had almost disappeared. The improvement continued until *21st May*, when the child took measles. The attack was fortunately a very mild one, but it produced a distinct relapse. The cough, which had almost left her, returned; and the paralytic condition of the ocular muscles became much more marked, though never so absolute as it was when the case first came under observation.

On *16th June* the eyes were still kept in complete divergence, but the left eye could be directed inwards by voluntary effort; the contraction of the internal rectus was, however, unsteady, and the rotation inwards jerky and nystagmus-like. The mental condition was greatly improved, but still far from natural. The general health was good.

On *21st September* the paralytic condition of the ocular muscles had completely disappeared; the expression was so much brighter and more intelligent that it was difficult to recognise the patient as the same child (see Fig. 2). The mental condition now seemed to be quite normal, though the mother said that the child was by no means so intelligent and lively as she used to be; the sleepy condition, the cough, and the voracious appetite had completely disappeared; the child now ran about, played, and amused itself in a perfectly healthy and natural manner. The screaming fits still continued.

The middle finger of the right hand was much swollen, apparently the result of scrofulous disease of the first phalanx; the child made no complaint of the finger, and it was only by pretty firm pressure that any complaint of pain or tenderness could be elicited. The mother stated that the child had always borne pain with remarkable fortitude, and that it was quite possible that she felt pain in the finger but did not complain of it. The swelling of the finger had commenced gradually, and had been first noticed some three or four weeks before we saw it.

An ophthalmoscopic examination was again made; the retinal veins were certainly large, but the edges of the optic discs were well defined, and there were no appearances of past neuritis.

On *9th October* a firm localized swelling, fully the size of a half walnut, was observed in the lower part of the left calf; the skin over the swelling was of a reddish-purple colour and felt brawny; there was some, but remarkably little, tenderness on pressure over the swollen part.

The iodide was discontinued, as it was thought possible that the swelling might be due to the long-continued use of that drug; cod-liver oil and quinine were substituted.

On 14*th November* the discoloration of the skin of the leg was much less; the hardness and swelling much diminished, but still very perceptible; the condition of the finger was unaltered. The general health was good. The iodide of potassium was again prescribed, and iodoform and lanolin ointment ordered to be applied to the swollen finger.

On 9*th December* there was a slight return of the bronchitis; the swelling of the finger was distinctly less; that of the leg had almost entirely disappeared.

Remarks.—It can hardly be doubted that the lesion in this case was situated at the top of the pons Varolii, in the neighbourhood of the aqueduct of Sylvius.

The fact that the muscles supplied by the third, fourth, and sixth nerves on both sides were involved; the absolute character of the paralysis; the suddenness with which it occurred; the facts that vision was unaffected, that there was no paralysis of the limbs and face, and that, so far as could be ascertained, the functions of the fifth nerve were not involved, rendered it almost certain that the lesion was central, involving the nerve nuclei in the pons Varolii, and that it was not basal, involving the nerve trunks; while the fact that the movements of the pupil were not interfered with showed conclusively that it was not the trunk of the third nerve, but only those nuclei connected with the external muscles of the eyeball which were implicated.

Now, if this localization be correct, and it cannot, we think, be doubted, the case confirms in a very striking way recent observations as to the composition, so to speak, of the third nerve nucleus. Hensen and Völckers "have shown that the nuclei of origin of the third nerve contain separate centres for the individual oculo-motor actions. After removal of the cerebral hemispheres in dogs, they found that the application of electrical stimulation to the floor of the aqueduct of Sylvius and posterior part of the third ventricle gave rise to different ocular movements, according to the position of the electrodes.

"Most anteriorly, in the wall of the third ventricle, is the centre for accommodation (Fig. 3, Acc.) acting on the tensor of the choroid through the anterior root fibres of the third nerve. Behind this is the centre for the constrictor fibres of the iris. (Fig. 3, Ir.)

"Next, at the point of junction of the third ventricle with the aqueduct of Sylvius is the centre for the rectus internus (Fig. 3, Rect. int.), and further in order backwards, centres for the rectus superior, levator palpebræ superioris, rectus inferior, and lastly, that of the trochlearis or obliquus superior, the centre of which lies below the testes and somewhat laterally. (Fig. 3, R. u. O.)"[1]

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[1] Quoted from Ferrier's *Functions of the Brain*, second edition, page 152. The original paper will be found in the *Archiv f. Ophthalmologie*, Bd. xxiv., 1878.

In Figure 4 a longitudinal vertical section of the human brain is represented, the nerve nuclei being placed in the same position from before backwards as Hensen and Völckers have shown to be the case in the dog.

Kahler and Pick come to a slightly different conclusion as to the relative positions of the different nuclei. Whilst admitting (what indeed there is now abundant clinical experience to lead one to look upon as an established fact) that the centres for the nerve supply to the sphincter pupillæ and ciliary muscle lie detached from those for the fibres passing to the external muscles, also supplied by the third nerve, they were led from the post-mortem examination in two cases of incomplete nuclear paralysis of the third nerve (in one of which the elevators of the eye and lid ware alone affected, and in the other, mainly the internal rectus), to locate the nuclei of the nerves to the elevator muscles in a line lying to the outer side of those destined for the supply of the internus and inferior rectus. This would bring the nuclei of such fibres as are physiologically associated into immediate proximity to each other —an arrangement which would seem more probable even *a priori* than that given in Hensen and Völckers' scheme.

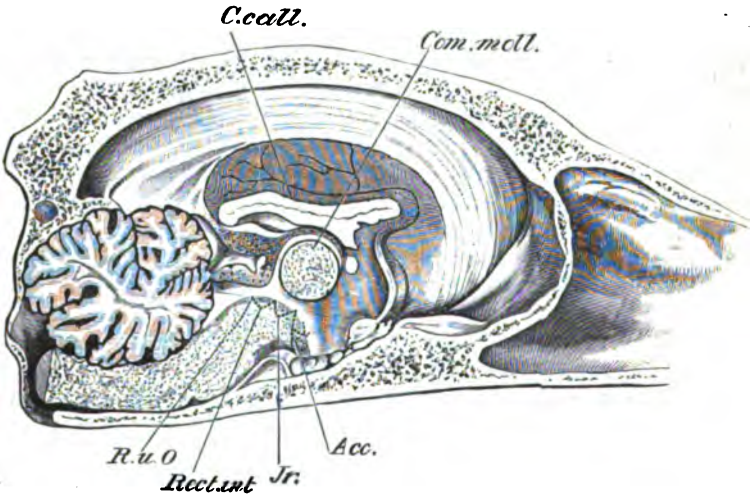

FIG. 3.—*Sagittal Section of the Skull and Encephalon of the Dog (Hensen and Völckers). C. call., Corpus callosum; Com. moll., Commissure mollis; Acc., Centre of Accommodation; Ir., Centre for the Sphincter Iridis; Rect. Int., Centre for the Rectus Internus; R. u. O., Centre for the rest of the Ocular Muscles.*

The fact that in this case the movements of the pupil were quite unaffected, while the rectus internus muscle (the nerve nucleus of which is situated next in order, from before backwards, to that for the sphincter of the pupil) was paralyzed, would seem to show that in man the nerve nucleus for the pupil is more widely separated from the nerve nucleus for the internal rectus than we have represented it in figure 4. Probably the difference which Carville and Duret have shown to exist in the source of vascular supply to the nuclei of the nerves supplying the internal and those supplying the external muscles of the eye may be of some determining influence in certain pathological conditions.

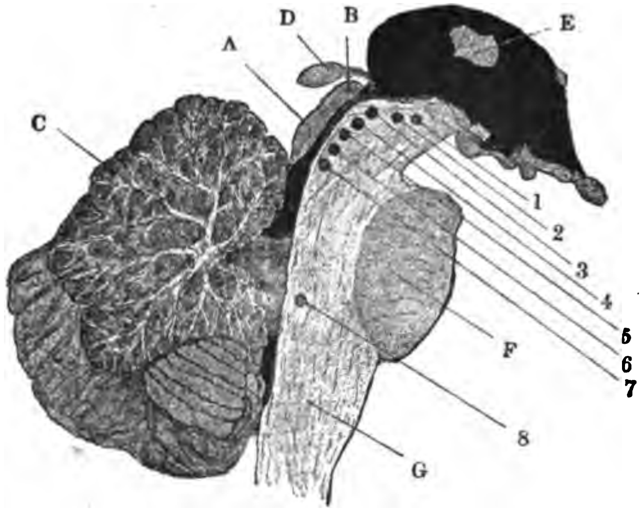

FIG. 4.—*Longitudinal Ventrical Section through the Human Brain, showing (diagrammatically) the Position of the Nerve Nuclei of the Ocular Muscles.*

A, testes, and B, nates of corpora quadrigemina; C, Cerebellum; D, pineal gland; E, soft commissure in the middle of the third ventricle, which with the aqueduct of Silvius and fourth ventricle are represented in black; F, the protuberance of the pons; G, medulla oblongata; 1 to 6, different parts of the third nerve nucleus, viz.:—1, centre for accommodation; 2, centre for sphincter of the pupil; 3, centre for internal rectus; 4, centre for the rectus superior; 5, centre for the levator palpebræ superioris; 6, centre for the rectus superior. 7, centre of the 4th nerve (trochlearis) for the superior oblique; 8, centre of the 6th nerve for the external rectus.

The case also seems to confirm the experimental observations of Ferrier as to the function, or rather one function, of the posterior division (testes) of the corpora quadrigemina. Ferrier found that "irritation of the testes invariably elicited barking or cries of various kinds, in addition to the other phenomena mentioned (dilatation of the pupils and general motor symptoms, direction of the eyeballs and head to the opposite side and upwards, trismus, retraction of the angles of the mouth and of the ears, and ultimately opisthotonus). Bechterew," he says, "states that vocalization in connexion with excitation of the testes is not constant, but I have seen no exception to the rule unless when the excitability of the corpora quadrigemina was so reduced by shock, hæmorrhage, or the like, that irritation failed also to produce the other characteristic results. So constant is the excitation of cries when the testes are normally responsive, that the utterance of a bark or cry may be regarded as a sign of irritation of these structures when electrical exploration is being made in their neighbourhood."[1]

Now in this case, in which there was every reason to suppose that the lesion was situated immediately beneath the corpora quadrigemina, the screaming fits, which occurred without any apparent cause, and which sometimes lasted for half an hour at a stretch, were a striking symptom. It seems not unreasonable to suppose that the testes of the corpora quadrigemina were irritated by the lesion, and that the screaming fits were therefore identical in character with the cries which electrical irritation of the testes produces in the lower animals. Whether the pupils were dilated during the screaming it has been impossible to ascertain, for we never had the opportunity of observing the child during one of these attacks. The mother states that the hands were clenched during the attacks; whether there were any other motor phenomena we have not been able to determine.

The mental apathy and sleepy condition of the patient and voracious appetite may perhaps be accounted for by supposing that the lesion blocked up the aqueduct of Sylvius (and possibly was so extensive as to interfere with the circulation in the veins of Galen), and produced a temporary dropsy of the ventricular system of the brain.

The exact nature of the lesion must to some extent be a matter of conjecture; but we are disposed to think that it was probably tubercular. We base this opinion upon the facts that tubercular lesions are by far the most common cerebral lesions in children; that there was no evidence of inherited syphilis, nor of any other condition except tubercle, which was likely to produce a localized lesion of such suddenness and intensity; and especially upon the swelling (apparently scrofulous) of the middle finger of the right hand, which developed during the progress of the case.

When the child first came under observation we were disposed to think that disseminated bronchitis of the smaller tubes might probably be associated with a tubercular lesion of the lungs. The fact that the bronchitis disappeared is a very strong, though perhaps not absolutely conclusive, argument against this view; for, with Bristowe and others, we think we have seen cases in which diffuse tubercular lesions (tubercular meningitis, for example) have resulted in cure. Further, it must be admitted that if the lesion in the pons, which seems to have disappeared, and if the lesion of the finger, which seems to be disappearing, were tubercular, there is no reason why a pulmonary tubercular lesion may not have disappeared too.

In considering the probability of the brain lesion being tubercular, it may be suggested that the gastro-intestinal attack which occurred five months before the cerebral symptoms, and which was severe, may have produced inflammatory enlargement, with subsequent caseation, of some of the mesenteric glands, and that this may have been the starting point of the whole condition.

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[1] *The Functions of the Brain*, second edition, page 166.

The fact that recovery took place after the long-continued administration of iodide of potassium is compatible with the supposed tubercular character of the lesion, for it has recently been claimed that tubercular meningitis may be cured by the internal administration of this drug, and especially by the inunction of iodoform to the scalp.

But whatever was the pathological nature of the lesion, the case is a remarkable one, firstly, because of its rarity, ophthalmoplegia externa acuta being an extremely rare condition; and, secondly, from the fact that with such well-marked and severe symptoms, recovery —possibly only temporary recovery—has taken place.

The term ophthalmoplegia, which fully expresses the nature of the muscular defect in such cases as the one we have described, was practically introduced by Jonathan Hutchinson, for, although used by v. Græfe and even earlier, it can hardly have been said to have been adopted until Hutchinson called attention to the subject in 1879. The first to explain, with any attempt at generalisation, the nuclear nature of uncomplicated cases, was probably Forster in 1878.

Ophthalmoplegia externa has been met with at all ages as well as congenitally. Most cases that have been published have been chronic, and often more or less stationary. This has been the case, too, in the other cases which we have seen. A few acute cases have, however, been recorded; and in these, marked drowsiness, as exhibited in our case, seems generally to have been a prominent symptom. In a few cases more or less improvement took place, but we can find mention of only one other case in which there was complete recovery, viz., Mauthner's case, which is given in detail in his recent monograph on ocular paralyses due to nuclear lesions.

Part Second.

REVIEWS.

A Commentary on the Diseases of India. By NORMAN CHEVERS, C.I.E., M.D., F.R.C.S. Eng., Deputy-Surgeon General H.M. Indian Army, etc., etc. London: J. & A. Churchill: 1886. Pp. 806.

THIS portly volume is the outcome of a course of observation, thought, and study, which has occupied the whole of a professional lifetime. The author—alas! now deceased—wished in this volume to represent the labours of his European and native brother officers in the vast fields of medical and surgical observation and practice which India affords.

Like his *Medical Jurisprudence in India*, published in 1855, and which in six years passed through three editions, this book is in all probability destined to a like, if not greater success, for the author's experience is of no ordinary range, he having practised in India from 1848 to 1876, and during part of this time, viz., from 1861 to 1876, he was Principal of the Calcutta Medical College, and first physician of the College Hospital. He was also a Fellow, and for some time President, of the Faculty of Medicine in the University of Calcutta. Like all medical men who have gone to practise within the tropics, Dr Chevers regrets that so many go out without enjoying any special training for the work they will have to perform. Of himself he says that he was singularly fortunate, for when he joined the Indian Medical Department he had already steadily worked twelve years in the hospitals and medical schools of London, and yet, he says, the first thing that struck him when practising in Bengal was that doubt beset him on every side. "As I advanced, I soon began to discover that my knowledge was more troublesome even than my ignorance, and that, while I had to learn how native patients ought to be dieted, when quinine can best be administered in remittents, ... and to satisfy myself upon a hundred other questions of the greatest importance, I found that I had before me the still more difficult task of divesting my mind from a host of strong opinions. . . . . In fact, I only avoided great mischief by the observation of strict moderation and the most vigilant caution. My object is to give. . . . . that information of which I then found myself most in need. . . . . I have endeavoured to give some notice of every disease in the observation of which the English medical man will find that he has something to learn on commencing practice in India, and also to set forth the leading characteristics in which the diseases of India differ from those of Europe."

As might be expected from such an experienced writer—for since 1851 Dr Chevers has been constantly contributing to the medical literature of the day—the task which he set himself to accomplish has been performed with great skill and literary ability. After a few pages on the general characters and comparative frequency of the diseases which present themselves to the notice of the physician in India, the author gives a masterly summary of the influence of temperature upon disease, calling attention to many facts of the greatest interest and practical importance. Indian dietetics and the Materia Medica of India next receive attention. Parasitic disease is then treated of in general notes on the commoner parasites. In referring to the subject of vaccination in India, the difficulty of its successful accomplishment, and the evident preference of the native population for inoculation, Dr Chevers, while fully admitting the self-evident objections to this measure, doubts whether its adoption would not have effected more good than that of vaccination has done. He also calls attention to the fact that both in Calcutta and Bombay the reproduction of strong virus through the calf is needed, owing to the degeneration of the lymph by vaccination, from arm to arm, during the hot and rainy seasons. Measles, he says, is less dangerous to the children of well-to-do Europeans than it is at home; still it is very common and very destructive among the children of the native poor in cities. With regard to Beri-beri, the author considers it a specific fever *sui generis*, and believes that in the nomenclature of disease it ought to be placed next to scarlet fever, with which fever it has certain marked features in common. He does not believe that Beri-beri is a form of malarious cachexia, but he thinks that the victims of malarious cachexia are specially liable to suffer from its attacks. When considering the treatment of this disease he lays great stress on the importauce of endeavouring to see each case *ab initio*, and to prevent, if possible, the recurrence of renal and other visceral mischief, anasarca and dropsical effusions into the serous cavities. He objects very strongly to the use of purgatives or diuretics, his great object being to obviate renal congestion in all possible ways. and to make the work of the kidneys as easy as possible.

Dr Chevers does not believe that typhus ever occurs in Bengal proper; he says he never saw a case during 27 years of practice there, although constantly on the look-out for it, but he quotes the authorities who differ from him upon this point. The author gives a very interesting account of Mahamurree and of Indian relapsing fever. He appears to believe that there is an intimate relation between the two diseases, which are, however, absolutely different in type, for there can be no question, he says, that one has always appeared as the almost immediate herald of the other, and that the two pests have run their own courses of destruction concurrently, but usually in different, and often widely separated, districts of India.

In writing of enteric fever and marsh remittent fever he maintains that no two entities in Nature are more essentially distinct from one another than are these two diseases. To quote his own words—"I cannot abandon the belief, founded upon the observation of a lifetime, that there occur every year in Bengal thousands of cases of what I recognise, by its history and symptoms, as palludal remittent, with or without bowel complication, more or less amenable to quinine; and that there also occur, only at intervals, small groups and isolated cases of that which, also by its history and characteristics, I perceive to be enteric fever, a disease which it is as impossible to arrest by quinine as it would be to batter down the Tower of London with feather bolsters."

"I have lived and practised, and shall probably die, firm in the belief that intermittents and remittents are caused by a specific poison or morbific entity which emanates from certain soils. . . .

I remain fixed in the opinion that heat and chills, and damp, and sudden and great variations of temperature, are not the primary and true causes of these fevers." A page or two later on we come upon a practical hint of no little importance. "The British soldier ought not, if possible, to be recruited in marshy districts." For, as he says, "Of the Indian soldier who has been recruited from a palludal district it may, I consider, be truly said that he, in

> 'The moment of his breath
> Received the lurking principle of death.'—*Pope*."

With regard to the treatment of malarial fevers, he believes in the specific action of quinine, and, knowing that quinine does not cause bowel irritation, he never prescribes arsenic in fever, and very rarely employs it in other diseases. He does not believe that intermittents and remittents are degrees or developments of the same malady, or the results of one and the same cause, but that they are somewhat cognate although perfectly distinct maladies, caused by different kinds, degrees, or forces of malaria, not always prevailing in the same district, but generally appearing at different seasons of the year, the intermittent being a disease of swamps and marshes, the typical remittent a malady of jungles and terais.

Dr Chevers takes occasion, when speaking of malarial spasmodic asthma, to say that he believes it is in all probability caused by *salt marsh air* and not pure sea air. He takes occasion, when expressing this opinion, to remark on the advantages of those few seaside resorts which are free from marshiness. "To seek refreshment in a swamp," says he, "at the hottest season is rather the act of a buffalo or wild pig than that of a circumspect well-advised paterfamilias, who desires to afford the blessings of ozone and sea-water to his etiolated flock."

We must call attention to the method of "washing the stools," which, Dr Chevers believes, is still unknown in England, although it is a most valuable aid in practice. He attributes the method to Dr E. Goodeve. We quote his description of it:—"The stools passed since last visit have water poured freely upon them. Any feculent matter which may be present floats, the water is poured off, and whatever has sunk to the bottom of the vessel is allowed to remain there. This sediment contains the 'dysenteric products.' Water is again poured on and off until the 'products' are left nearly clean. . . . Here it is to be observed that, with the exception of fæces and pure blood, of which we, of course, take due notice, everything that is worth seeing and which tends to acquaint us with the nature of the case, sinks to the bottom. . . . Holding a long pair of dissecting forceps in one hand and a long probe in the other, we examine the 'dysenteric products' as they lie under water. . . . Having examined the products, we saw almost as much of the case as the surgeon sees when he looks at an ulcer of the cornea. Besides seeing what was happening within the patient's body, we could, without asking a question, perceive almost to a day, the age of the case, and could prognosticate its final result with much confidence. Thus, a quantity of gelatinous, rose mucus, with feculent matter, a case of not more than twelve hours' duration. The same mucus without feculent matter—probably this case has gone on unchecked by treatment for from six to thirty-six hours longer than the last. Brany mucus—this is a case from five to eight days old, doing well under treatment," and so on.

We may mention, in closing this review, that the book is a storehouse of information for those practising in the tropics, and to practitioners at home, who have to treat returned tropical patients, it offers many valuable hints as to diagnosis and treatment.

Spasm in Chronic Nerve Disease. By SEYMOUR J. SHARKEY, M.A., M.B. Oxon., F.R.C.P., Assistant-Physician and Joint Lecturer on Pathology at St Thomas's Hospital. London: J. & A. Churchill: 1886.

THIS volume consists of the Gulstonian lectures delivered at the Royal College of Physicians of London in 1886. A rapid glance at the course of the motor fibres, from the cerebral cortex through the basal ganglia and cord, necessarily introduces the important and interesting subjects with which they deal. Then follows a clear and succinct inquiry into the phenomena of tendon reflexes, and even thus early the author strikes the key-note of his subject in the influence he ascribes to the pyramidal tract. He follows Hughlings Jackson in believing that the suppression of the functions of this tract permits a hyper-physiological activity in the spinal centres—to use the author's own words, "increased tendon-reflexes, clonus, and contracture are degrees of independent neuro-muscular action, originating in the spinal centres, which have run riot owing to the diminution or annihilation of the inhibitory functions of the pyramidal tract." Yet at the same time he clearly recognises and accepts at its true value the fact that these morbid phenomena may be present without "gross and tangible disease," but with this aspect he deals more fully at the end of the volume. He passes in review affections of the pyramidal tract within the cranium, beginning with the motor area in the cortex, and shows very conclusively that paralysis and spasm are the invariable result of destruction of this tract. In this relation he adduces cases which prove that these phenomena, when they occur from tumour growths in other regions, are the result of secondary pressure on the pyramidal tract at some part of its course. He strengthens his position still further by reference to congenital defect of the pyramidal tract—by pyramidal tract being meant both the cortical centre and the fibres leading from it. From fixed spasm after hemiplegia he passes on to the various mobile spasms after hemiplegia, or independently of it, and he concludes that "all the varieties of mobile spasm seem to result from a mixture, in varying proportions, of paralysis, spasm, and irritation; and their development depends upon lesions which interfere with the perfect functions of the motor centres and fibres, but which do not completely interrupt them." Following the pyramidal tract to the cord, he shows that its affection there produces similar phenomena to those produced by its implication higher up.

He proceeds in the succeeding and final lecture to consider the relations between diseases which affect the spinal system and spasmodic contraction of muscles, and these he discusses under three heads—(1), spasm produced by diseases of efferent spinal nerves; (2), spasm produced in a reflex manner by diseases of afferent nerves; and (3), spasm produced by diseases of the ganglionic cells. The lecture concludes with a consideration of Functional Spasm, and he concludes that, as "healthy functions must depend upon fine molecular rearrangement," molecular changes form the basis of pathological conditions, but these, as he truly says, are "at present a closed book to us."

We have reperused these lectures with the greatest interest, forming as they do a most able, original, and valuable contribution to the elucidation of neural pathology. We congratulate their author on their appearance in book form, and commend them to every member of the profession as worth perusal and mastery.

Insanity Curable. Mental Disorders and Nervous Affections successfully treated by a New Especial Method. By GEORGE MOSELEY, M.R.C.S., etc. London: J. & A. Churchill: 1886.

WE opened with a prejudice against this little book on reading that it was designed for the perusal of non-medical persons, but on reading it through we are inclined to believe that the author is well acquainted with the subject of which he treats, though he does not seem to have learned it in asylums. Moreover, we think that Mr Moseley is under a delusion in believing that his book will be understood by ordinary readers. We certainly would like to see a little more faith in therapeutics, a little more study of individual patients, and less of the expectant treatment in asylums for the insane. Mr Moseley insists that injudicious feeding is responsible for the incurable character of very many cases of insanity. He holds that such is the sympathy between the brain and the digestive organs in diseased conditions, especially in insanity, that any irritation of the stomach or liver immediately travels upwards, and establishes a continuity of diseased action in the nerve cells of the brain.

We do not see anything special in the treatment sketched out by Mr Moseley, save a new way of applying counter-irritation to the scalp, producing an artificial skin eruption invented by an irregular German practitioner named Baunscheidt. He lays much stress on warm and cold applications to the head, and medicines to soothe irritations of the stomach and intestinal canal.

Diseases of the Mouth, Throat, and Nose. By Dr PHILIP SCHECH. Translated by R. H. BLAIKIE, M.D. Edinburgh: Young J. Pentland.

DR SCHECH's work has been so favourably received by the German medical press, and also by British writers on the subjects with which it professes to deal, as to fully justify the translator in his task of presenting it to English readers in their own language.

The work, as indicated by its title, deals with the diseases of the mouth, throat, and nose. It appears to us that the omission of the larynx and trachea is apt to detract from its value as a manual. It would have been much more satisfactory, and certainly more convenient, if a place had been found in the volume for laryngeal and tracheal diseases, which form one of the most important subdivisions of the department of medicine with which this volume is concerned. This omission is, of course, not the fault of the translator, who seems to have executed his task with care and fidelity.

The volume is illustrated by drawings of several elegant instruments, many of which are of the author's own design, and are now largely used in this country. An appendix by the translator contains a number of notes from recent writers relative to the subjects of the work.

The publisher, as is his wont, has produced a volume which leaves nothing to be desired.

A Guide to the Examination of the Nose. By E. CRESSWELL BABER, M.B. Lond. With Illustrations. London: H. K. Lewis, 136 Gower Street.

THE important relationship which is not unfrequently found to subsist between intra-nasal inflammation and certain respiratory diseases, such as asthma, has rendered the examination of the nasal cavities of the utmost importance, alike to the physician and the specialist—to all, in fact, who have to do with the wide domain of respiratory disorders. As a guide and aid to such, this book is everything that can be desired.

Containing many serviceable illustrations (not a few of which are original), with a good literary style, and altogether destitute of "padding," this work may be fairly called a model guide. The chapters on the anatomy and physiology of the nose, on the symptoms of nasal disease, on the method of performing anterior and posterior rhinoscopy, and on the diagnosis of the commoner diseases of the nasal cavities, are of great importance, and alone would give a good character and stamp to the work.

The book is of handy form, and well got up. Altogether it is one of the best, if not *the* best work on the subject that we have had the opportunity of perusing.

Lectures on Medical Pathology. Delivered at the London Hospital by HY. GAWEN SUTTON, M.B., F.R.C.P. London: Baillière, Tindall, & Cox.

THIS volume contains the substance of a series of lectures, twenty-two in number, on Medical Pathology, as delivered by Dr Sutton to his class, taken down in shorthand by one of his students, and revised by himself.

We are struck throughout the book by the force and point of the lecturer's remarks. Each page claims attention, and in most sentences something worthy of note is to be found.

Among the chapters which especially attracted us, and that on account of the practical sound sense revealed in them, are those dealing with scrofula, phthisis, and heart disease, as also naturally the three relating to kidney affections, the author being well known as a practical worker in expounding pathological changes occurring in these organs. The book is not a large one, but is an example of quality standing before quantity. Dr Sutton evidently lectures in a delightfully terse and often almost epigrammatic manner, giving ample evidence of being an acute and patient observer in the consulting-room and by the bedside, as also in the post-mortem theatre.

We can with confidence recommend this little work, especially to the notice of the student and junior practitioner in medicine.

What is Consumption? By G. W. HAMBLETON, L.K.Q.C.P.I. London: J. & A. Churchill: 1886.

THE question which serves as the title to this essay is one of perennial interest, but we cannot congratulate the writer on adding aught to its solution. To him, consumption is but the result of deficient pulmonary respiration, brought about by many different causes; and by attention to this point the "degradation of the human race" is to be arrested. The little book is well written, but, in spite of its literary merit, it bears throughout the stamp of a very limited range of pathological knowledge. A tinge of Herbert Spencerism, and such a use of the doctrines of evolution as is not uncommon amongst those imperfectly acquainted with pathological processes, complete the book. Had the writer given us his *practical* experience instead of the sort of thing before us, we should have been more prepared to accept his theoretical contentions.

Some Remarks on the Classification and Nomenclature of Diseases. By A. Rabagliati, M.A., M.D., Senior Surgeon, Bradford Infirmary. London: Baillière, Tindall, & Cox: 1886.

These pages are a reprint from *The Medical Press and Circular.* They are devoted to a criticism of the classification and nomenclature of diseases drawn up by a joint committee appointed by the Royal College of Physicians of London. The criticism is in the main destructive; it contains, however, no trace of bitterness, and no personalities.

We can readily imagine it to be by no means difficult to destructively assault any imaginable system of classifying disease, but this is no reason why a classification having the status of being official should not be critically examined. The difficulty, we might have thought, would have been to have found any one willing to bestow the time and labour, and who, at the same time, was possessed of the ability necessary for such an undertaking. In Dr Rabagliati such a combination has been found. He makes out a very strong case in many points, we will not say against the compilers, but against the classification, and his very cogent criticism ought not to be lost sight of when a new edition is deemed necessary. The charges are specific and serious, such as large and important omissions, want of order and method, want of perception in the minds of the compilers of what in disease constitutes similarity and dissimilarity, tautology, and lastly, cross-divisions. There is much truth in this, and it is not improbable that the compilers may have been hampered by a too conservative clinging to the order adopted by their predecessors.

When, however, we turn from the destructive to the more constructive part, we find in Dr Rabagliati a strong faith in the future, and dreams of a time when precision and accuracy in diagnosis will have attained such a pitch and universality, that instead of a term like *neuralgia* we shall have *hyperæmia* or *spanæmia* of such and such a nerve taking its place. It is contended that apoplexy ought to be classified among diseases of vessels rather than among those of the nervous system, as it is rupture of the vessel which leads to the destruction of the nervous substance, the author evidently overlooking the fact that it is practically certain that many cases are returned as death from apoplexy where no rupture has occurred. In fact, it appears to us that in not a few cases the only safe return of the cause of death is by specifying the leading symptoms, such as fits, dropsy, etc., however unsatisfactory such returns may be from the standpoint of scientific medicine.

Apart altogether from the special purpose for which the essay was written, it possesses a further interest, for it is so well written that its mere perusal is a pleasure, and it shows its author to be a man with a wide and intelligent knowledge of disease in its many manifestations, and a mind full of suggestiveness and of hope in the future of his profession.

Artificial Limbs, and the Amputations which afford the most Appropriate Stumps in Civil and Military Surgery. By HEATHER BIGG, Assoc. Inst. C.E., L.R.C.P., L.R.C.S. Illustrated by the Author with numerous Pen-and-Ink Drawings, pp. 128 octavo. London: Published by the Author at 56 Wimpole Street: 1885.

IT is a fact of interest, no less than of importance, that the subject of which this essay treats is almost entirely neglected in the ordinary course of surgical teaching. Not merely is the question of artificial limbs omitted from the standard surgical works even on operative surgery, but it is omitted deliberately as a matter which only concerns the instrument maker and the patient after he has left the surgeon's hands. So far as the upper limb is concerned this view of things is sufficiently correct—the surgeon in operating leaves as much as he can, and the mechanician fits the stump with the most useful form of instrument that his ingenuity and the circumstances allow. But in the lower limb the case is now quite different. Formerly, when the risks of healing wounds were so great, and while it still remained true that every additional inch of bone removed increased the danger for the patient, we can understand that surgeons would chiefly concern themselves with leaving a long, though, of course, also a useful stump. The introduction of anæsthetics and recent improvements in wound-dressing, however, have so modified the risks during and after amputation that, except above the middle of the thigh, the old rule may be practically left out of account. As soon as the surgeon is freed from the pressing responsibility of risk to the patient's life, he is brought face to face with the importance of leaving a stump adapted to permit the best possible substitute for the part which has been lost.

In the work before us this question is discussed in a clear and pointed way by one who has made it a special study, and who has had the advantage of his father's experience and special training. Some of the conclusions are, no doubt, startling, but, based on so much practical experience, they are well worthy of attention. We are told that if the *tread* of the foot be lost, either by the destruction of its strongest part at the great toe, or by removal of all the toes, the whole foot should be amputated by Syme's, or, preferably, by Pirogoff's method. Hey's, Lisfranc's, or Chopart's amputations are to be discarded altogether. Above the ankle joint a great difference is to be made in the stump of those who can and those who cannot afford to have expensive substitutes supplied. For the rich, the seats of election are slightly below the middle of the tibia and femur respectively, and amputation at the latter place is to be chosen in preference to an operation at or within four inches of the knee-joint, either above or below. The reason for these rules is to be found in the necessity for space to form the new joint if above the knee, or to give leverage to the new limb if below that joint. The arguments are consecutive, and seem well grounded. One point, however, which is not made clear, is why Syme's and Pirogoff's operation should give room for the most perfect form of artificial ankle, and yet that above their level a considerable larger space must be left for a similar purpose? We are told that it is because in the first instance the "bearing" can be taken on the end of the stump, and that in the second the bearing must be taken on the ischium; but why this should make the difference we cannot see.

With poor patients, on the other hand, the seats of election are "four inches below the head of the tibia and a little below the middle of the femur, these points leaving the best stumps for 'box' and 'bucket' legs respectively."

In the course of his remarks Mr Bigg several times repeats an observation which at once sweeps away much of the older teaching as regards the power of stumps to bear pressure. He holds that, except after a Syme, or especially a Pirogoff's amputation, no reliance can be placed on the face of the stump for bearing the weight of the body, and that the only "bearing" points then available are the surfaces of the bent knee for a box or stiff substitute, or the tuber-ischii and neighbouring parts for every other form of artificial limb, especially those in which an artificial knee or ankle, or both, are to be made.

The various forms of artificial limb for both lower and upper limbs are carefully described and clearly illustrated by the author's pen-and-ink sketches.

Whether or not the experience of other makers of artificial limbs would agree in all points with that of Mr Heather Bigg, no one can fail to profit by a careful reading of his interesting essay, and many surgeons and teachers will, doubtless, be led by it to consider very carefully a subject which they had previously neglected.

The Journal of Laryngology and Rhinology. Edited by MORELL MACKENZIE, M.D., and R. MORRIS WOLFENDEN, M.D. London: J. & A. Churchill: Jany. 1887.

COMMENCING with the first month of 1887, the well-known London publishers, Messrs Churchill, have initiated the issue of a new monthly journal dealing with diseases of the throat and nose, and their cognates. It appears that this is the only publication of the kind in the English language, and, judging from the editorial and co-operative staff, and from the style and contents as instanced in the first number, it seems to us that the journal is likely to take and maintain a high place amongst similar publications, and be of immense service to those desirous at any time of referring to the literature of the subdivisions of medicine with which it professes to deal.

Annales de Dermatologie et de Syphiligraphie. Publiées par MM. BESNIER, DOYON, FOURNIER, et HORTELOUP. Tome VI. Paris: G. Masson: 1886.

THE names of the editors of this journal are sufficient guarantee of its value, and the volume just completed will be found to contain many articles of interest. When we add that Leloir, A. Trousseau, Unna, Brocq, Vidal, Lancereaux, and Pospelow have also contributed to its pages, we are sure that no more need be said in praise.

Journal of Cutaneous and Venereal Diseases. Edited by PRINCE A. MORROW, A.M., M.D. Vol. IV. New York: Wm. Wood & Co.: 1886.

THIS journal shows no falling off either in the variety of its contents or in their relative value as compared with previous years. Abstracts of many of the more important original contributions have been perused by our readers in these pages, but we may note as of more than ordinary interest, among others, "A Case of Dysidrosis of the Face," by Dr Jackson, illustrated by a remarkably good chromo-lithograph; "On the Limitation of the Contagious Stage of Syphilis," by Otis; "Dermatoses of the Eye;" and "Molluscum Contagiosum," by Allan—the latter paper entirely settling the communicability of the disease. An important discussion, not yet quite completed, on the value of arsenic in skin diseases, has found a place; and Dermatology in France and Great Britain has been well reviewed by Brocq and Cavafy. To allow a wider scope, the title in future will be the *Journal of Cutaneous and Genito-Urinary Diseases.*

Revue de l'Hypnotisme, Expérimental et Thérapeutique, paraissant tous les mois. Redacteur en Chef, Docteur EDGAR BÉRILLON. 12 Rue Vieille-du-Temple, Paris.

THE *Revue de l'Hypnotisme* has already reached its eighth number. It is a medical periodical, devoted mainly to the study of mesmerism, somnambulism, trance, and other similar conditions. It is conducted in a scientific spirit, and with great fairness to all opinions. Charcot, Dumontpallier, and other observers in the Parisian hospitals, have accustomed us to so many wonderful things that the reader will be prepared for something out of the beaten track. Amongst the writers we notice the names of Azam, Luys, Richet, and Auguste Voisin. The school of Paris assumes a direct physical influence, flowing from the mesmeriser or the metal plates applied to the body. The school of Nancy, on the other hand, represented by Bernheim and others, seeks to explain all the manifestations of hypnotism through the influence of mental suggestion, as was done thirty years ago by Braid, whose writings are still esteemed in France. Even accepting this explanation, the phenomena observed are often of a surprising character. They show that the influence of suggestions made in the hypnotic condition are capable of being utilized in mental and nervous diseases, and even in the removal of bad habits and vicious propensities in children. Amongst the diseases thus treated are mentioned incontinence of urine, amenorrhœa, neuralgia, and morphinomania.

L'Année Médicale (Huitième Année) 1885. *Résumé des progrès réalises dans les sciences médicales.* Publié sous la direction du Docteur BOURNEVILLE, Médecin de l'hospice de Bicêtre. Paris: Librairie Plon: 1886.

WE have had occasion to notice previous issues of this work, which is an admirable *résumé* of the progress achieved in the medical sciences. With the exception that special sections are devoted to advances made in Anatomy, Physiology, and Therapeutics, the arrangement is very similar to that adopted by *Braithwaite*, to which it is no mean praise to say it is fully equal. The indices are good, there being one for subjects and one for names, both very complete.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXVI.—MEETING III.

Wednesday, 19*th January* 1887.—Prof. GRAINGER STEWART, *President, in the Chair.*

I. ELECTION OF NEW MEMBERS.

The following gentlemen were admitted Ordinary Members of the Society:—Robert S. Aitchison, M.B.; J. A. Armitage, M.B., C.M., Wolverhampton; J. Walton Hamp, L.F.P.S. Glasg., L.S.A. Lond., Wolverhampton; Wm. Hunter, M.D.; Sidney Rumboll, L.R.C.P. & S., Grangemouth; John Thomson, M.B., C.M.

II. EXHIBITION OF PATHOLOGICAL SPECIMENS.

1. *Mr Skene Keith* showed specimens of DISEASED OVARIES AND TUBES illustrative of his paper.

2. *Dr Bruce* showed A BRAIN taken from a child which had been under the care of Dr Carmichael in the Sick Children's Hospital suffering from what was diagnosed as simple meningitis. It seemed to be a perfectly typical case, and was shown as a contrast to cases of tubercular meningitis in the ward. Shortly after she was admitted she was seized with severe convulsions, and her life was saved by free bleeding from the arm. After that she made a steady recovery. She was dismissed sometime before Christmas as cured, and remained apparently perfectly well till a few days ago, when she was brought in suffering from general convulsions, and died a short time after admission. At the post-mortem an interesting condition of the membranes was discovered which fully confirmed the diagnosis. The surface of the brain was a little congested, but there was nothing remarkable in the membranes at the vertex. On exposing the base of the brain the arachnoid was found to be slightly thickened and milky over pons, sides of medulla, and cerebellum. There was a peculiar projection on the infundibulum, a little cyst with a clear colourless fluid, and on compressing the brain, the contents of this cyst could be increased. On looking at the under surface of the cerebellum and medulla, the fibrous thickening of the membranes had formed an adhesion between the two sides of the latter and amygdala, which were also closely united. On opening into the brain the lateral ventricles were found considerably distended. The foramen

of Munro was dilated to have a diameter of about half-an-inch. The ependyma over the lateral ventricles had a slightly granular appearance, and was slightly thickened along the superficial veins. The third ventricle was also dilated, as was the fourth. The pineal gland was normal, and the two veins of Galen not at all obstructed. It was probable that the increase of fluid was due to the blocking up of the lymphatic outlet, at the foramen of Magendie, caused by the gluing of the cerebellum to the sides of the medulla, and that no convulsion had occurred till the increase of fluid had become so great as to cause pressure on the floor of the fourth ventricle. The origin of the meningitis was supposed by Dr Carmichael to be rheumatic, and a slight confirmation of this was found in a fibrous thickening of one of the cusps of the mitral valve.

III. Original Communications.

1. *Mr Skene Keith* read his paper on REMOVAL OF THE UTERINE APPENDAGES FOR DISEASE, WITH TWENTY-THREE CASES, which appears at page 811 of this Journal.

Dr Brewis remarked that a great deal had been said lately about the justifiability of this operation. They might, however, agree that in properly selected cases it was justifiable. The difficulty of selection arose partly from the present methods of examination not being sufficient to enable them to detect the exact condition of the uterine appendages. Bimanually they could make out enlargements of ovaries and tubes, but an ovary might be diseased and not enlarged. The symptoms might then help. Putting aside pain, which was very valuable, that of sterility was important. When a woman who had had children was sterile for some years, the uterus or appendages might be considered to be at fault. Bimanually they could thoroughly examine the uterus. If it was right they might conclude that the uterine appendages were at fault. If the sterility existed along with other symptoms which rendered life miserable or in danger, they were, he thought, justified in recommending the operation.

Mr Cathcart asked Mr Keith what his views were as to the pathology of the condition. Previously he thought many of these cases were subsequent to gonorrhœal inflammation. He was interested to notice that the majority of Mr Keith's cases followed abortion or childbirth. He should like to ask if there was evidence of any septic change having occurred, which had become chronic.

Mr Annandale said he had seen lately an explanation of the parotitis following ovariotomy, which was to the effect that the removal of the ovary caused some interference with the salivary secretion, and the ducts in such a condition permitted the entrance of germs to the glands, and so caused the inflammation. He wished to ask Mr Keith if he had met with any case in which this might be a likely explanation of this condition.

Dr James Ritchie asked if Mr Keith had any information as to the proportion of his cases in which the sound was passed. Judging from his experience of the practice in the gynæcological wards of the Infirmary some years ago, the passing of the uterine sound was a frequent operation, and if they were to take it as true, that this severe pathological condition calling for the removal of the uterine appendages was so rare, that Mr Keith and his father had, in a short time, practically exhausted the cases in this district, he could hardly believe that the passing of the uterine sound could be a common cause. He was of opinion that the most common cause was gonorrhœa, or a septic inflammation. He was surprised to note that in so large a proportion of the cases there was neither metrorrhagia nor menorrhagia, which were described as symptoms.

Mr Skene Keith, in reply, said that it was extremely difficult, if not indeed impossible, to say when a woman was sterile. A patient had come under his care lately with what appeared to be undoubtedly distended Fallopian tubes. Her illness had followed a miscarriage five years before. With rest and general treatment the patient improved and became pregnant for the second time, but aborted at the third month, and now the tubes were felt to be quite small and soft, and her old pains have gone. He did not think that gonorrhœa, at least in this part of the country, had much to do with the disease. In one case only was there a history of gonorrhœa, and in that case there was no pus, nor was there any in the case of the patient with syphilis. The sound had been passed in twenty-one of the twenty-three cases. He thought the condition was inflammatory, and that laceration of the cervix had often more to do with it than anything else. He was struck with the little change in the menstruation to which Dr Ritchie had referred. It had at first been given out that there was always increased menstruation, but the symptoms had then not been fully worked out, and in some cases there had doubtless been increase, which may have led to the belief that it was always present. He had seen suppuration of the parotid after ovariotomy. He went into the question pretty fully, and believed that it was as common after other operations.

Mr Annandale said it was inflammation, not suppuration, he referred to.

Dr Ritchie said it was held that inflammatory affections following confinement might be traced to a gleet in the husband which had not caused mischief till that time.

Mr Keith thought that in that case the trouble would have shown itself immediately after labour, but all his patients made a good recovery from the labour, and did well till they got up. He believed that a torn cervix had more to do with it than the gleet. This was shown in one case which had been sent in for operation. The torn cervix was sown up, and the operation was followed by softening of the tubes, which had been enlarged and hard, and the patient had been completely cured.

2. *Prof. Annandale* read a NOTE ON PRELIMINARY TRACHEOTOMY, which appears at page 778 of this Journal.

Dr Duncan said it was necessary to open the windpipe on certain occasions where the entrance of hæmorrhage into the air passages during the performance of operations was to be feared. In most cases position might do a great deal to obviate these dangers. He himself preferred the side position to allow the blood to run out of the mouth. Mr Annandale was in the habit of operating with the head thrown back over the table, which prevented the passage of blood into the trachea, but he thought it rather apt to increase the blood flow. But there were cases undoubtedly, though not so many as Trendelenburg would make out, in which preliminary tracheotomy was beneficial. He had the other day an epithelioma of the tonsil, a disease in which there was a tendency to considerable hæmorrhage from vessels not easily got at, especially in a cavity where one could not be absolutely sure of cutting very wide at all parts of the growth. In that case he performed a preliminary laryngotomy, the opening of the larynx being an easier and quicker operation than the high tracheotomy. It was not a matter of great importance whether the one or the other was done. As Mr Annandale had said, the proper period for its performance was immediately before the major operation. There could be no advantage from doing it sooner, and disadvantages, such as bronchitis and pneumonia, might arise. An important point, and Mr Annandale had laid down the laws for meeting it, was when the tube should be removed. Where there was risk of œdema glottidis it had better be kept in during the next day or two days, but if the operation were not at the root of the tongue or tonsil, or back part of the pharynx, the tube should be removed immediately after the operation, as soon as the risk of blood getting into the air passages had ceased. The prevention of the entrance of blood into the air passages was best done by the sponge. A small sponge was all that was required. The only advantage of the large sponge was that it could be easily got out, but this could be done as well by means of a string attached to the small sponge. The disadvantage of the sponge was said to be that it might interfere with the operation, but even in the case of removal of the tonsil he had not found it so.

Dr Scott Lang asked if Mr Annandale had ever used the Trendelenburg tampon. It seemed to him that it would not prevent the lodgment of clots in the box of the larynx. He thought this was a disadvantage which the methods recommended by Mr Annandale and Dr Duncan got rid of. He wished to know how and when the clots were to be got out of the larynx, supposing an operation to have been completed, using the Trendelenburg apparatus.

Mr Cathcart asked if Mr Annandale's experience corroborated what he observed at the only operation at which he had seen the tampon used. After the introduction of the tube and inflation of the balloon, there was much more coughing than occurred after the introduction of the ordinary trachea-tube. This prevented the operation going on for an unusually long time, and was attributed to the irritation caused by the pressure of the balloon on the mucous membrane of the trachea.

Mr Annandale said he was glad to think the paper was received by surgeons as laying down a proper practice. It was a fact that, within the last few years, he had begun to place the head over the end of the table in the operation for cleft palate. He did not think there was much difference between the two positions, but in the one case of cleft palate, in which he had such trouble from bleeding into the air-passages, as was described, the head was on the level of the table. He did not care for the sponge alone. It was too porous; but he preferred it covered with india-rubber or waterproof material. He had never used the Trendelenburg tampon. It was in his museum as a specimen of the kind of instrument, which, although ingenious, could not be used satisfactorily in practice.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVIII.—MEETING III.

Wednesday, 12*th January* 1887.—Dr Berry Hart, *Vice-President, in the Chair.*

I. *Professor Simpson* exhibited a specimen of an EXOMPHALIC FŒTUS, borne by a primiparous patient in the Maternity Hospital, with the following history by Dr Tillie, house-surgeon:—

"M. S., primipara, age 21, was admitted on 1st January 1887. Patient was a strongly built, healthy looking woman. During pregnancy her health was excellent. The date of last menstruation was doubtful, but occurred sometime in June or July. She thought herself at about the seventh month of pregnancy. Fœtal movement had been missed for several days. On examination she was seen evidently to be in the second stage of labour. Palpation gave doubtful results. The fœtal heart could not be heard. On vaginal examination the cervix was found nearly fully dilated, the membranes ruptured, and the left arm and an unusual mass presenting with it. Further palpation showed the position to be transverse—left acromio-posterior. As strong uterine contractions were present, turning was performed at once, but with difficulty. The fœtus was laterally flexed, so that the last ribs were in the pelvic axis, the left arm and the mass referred to (afterwards seen to be the abdominal contents) presented, the head and right arm were on the left side of the uterus, and the pelvis and lower extremities, fully extended, on the right side. After much trouble a knee was reached and turning accomplished. The further progress was easy. The placenta was expelled with the fœtus. The cord was very short. The whole abdominal contents were outside the body. The sex was female. The body, etc., readily assumed the position above described as that in utero. The specimen was sent to Prof. Simpson without being interfered with."

Four years ago he (Prof. Simpson) had shown a similar preparation, and in relating the history of the labour had called attention to some peculiarities in connexion with it, which were all confirmed by this new case:—1st, The labour was *premature*. 2nd, The *attitude* of the infant was peculiar. Instead of the usual anterior incurvation we had the trunk curved backwards and to the right side, so that the clubbed feet of the fœtus were close to the right side of the occiput. 3rd, There was a *malpresentation*. Instead of the head, the ventral mass with the left shoulder and side of the thorax were felt through the os. Out of fifteen such cases, therefore, of exomphalos presentation of the abdomen had been met with in thirteen. 4th, The *delivery* had to be effected artificially, by introducing the hand and laying hold of one of the lower limbs.

II. DEFORMED FŒTUS AT SEVEN MONTHS. By Dr Hartley Dixon, Adelaide. Communicated by the Secretary. The paper will appear in a future number of this Journal.

Prof. Simpson thought the thanks of the Society were due to the writer of the paper for sending his communication from so distant a part. The effect of impression on the mother's mind raised debatable matter.

Dr Berry Hart said he had a photograph of a man who was without the lower half of one of his arms, and whose child was born with a similar defect.

III. NOTES OF SIX MONTHS' WORK IN THE MIDWIFERY WARDS OF THE WOMEN'S HOSPITAL, MELBOURNE. By Dr John W. Dunbar Hooper, Resident Surgeon. Communicated by the Secretary. The paper will appear in a future number of this Journal.

Prof. Simpson agreed that the line of treatment followed was reasonable, and could not wonder at its being successful. He thought that lotions of the strength of 1 to 40 were too strong to be applied to bruised external parts. He could not understand how immunity from inflammation of the breasts could be accounted for by not poulticing them. The method of strapping the mamma, as practised in the Maternity, had been successful in preventing mastitis.

Dr Berry Hart did not think that the Hospital could be specially healthy, as diphtheritic vaginitis had occurred. The case of peritonitis with pleurisy required to be proved that it was not septic.

Retention of membranes should not happen if the Credé method were properly employed.

IV. SECTIONAL ANATOMY OF SECOND STAGE OF LABOUR, AND OF LOWER UTERINE SEGMENT, by Dr A. H. Freeland Barbour, and which will appear in a future number of this Journal.

Prof. Simpson said that Dr Barbour had not given his own view. In Bayer's paper, development of the lower uterine segment mainly in the anterior wall and in the sides is a point of great importance. It was once thought that the thinning was equal all round, and Bayer has been the first to point out that it is chiefly in the anterior and side aspects. Prof. Simpson agrees with Dr Barbour that Bayer's diagrams are not intelligible. The difficulty is to understand where this long canal is derived from, what grows into this tube of 2 inches in length. Bayer thinks that it is derived from expansion of the upper part of the cervical canal. Histologists must decide whether the mucous membrane is derived from the body or cervix. He must hold his judgment in suspense till further evidence is produced.

Dr Berry Hart said that many might think this paper to be of no great value, but it was one of great scientific interest. He held that the view of the Berlin School and Matthews Duncan's was correct, viz., that the cervical canal remains intact, that the portion above called the lower uterine segment becomes stretched during labour, and that the mucous membrane there is uterine. He cannot understand how the cervical mucous membrane can be transitional. Bayer's paper is interesting, but the drawings are unsatisfactory.

Prof. Simpson remarked that Dr Symington and others have shown that during development there is a time when the mucous membrane of body and cervix is the same. Changes in the uterus are brought about by the development of the ovum in it; and if under any circumstances the lower pole of the ovum began to grow down into the cervix, the cervical mucosa might easily enough become modified in its upper part to fit it for deciduation.

Dr Barbour thanked the Society for having listened to his paper, which from its being anatomical must necessarily be a dry subject. The object of his paper was to state the facts as far as these could be collected. He does not see Prof. Simpson's difficulty about the origin of the canal. As during labour the lower uterine segment develops chiefly from the anterior part and the sides, he would suggest that gravity plays an important part in its production. The decidua of the lower segment differs from the uterine only in its thickness and the character of the trabeculæ. The occasional occurrence of a so-called transitional mucous membrane is not doubted; the chief point about it is that the cells are smaller, more compact, have ciliated epithelium, and stop where the membranes become adherent: it has only been found in one or two out of the many preparations recorded in the table. He thinks we are justified in assuming that transitional epithelium is not present where the membranes are described as adherent up to the os internum, and this makes the number of cases in which this epithelium has been described relatively so few that we must regard its occurrence as exceptional.

THE GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

THE fourth meeting of the second session was held in the Faculty Hall on January 26th, 1887—Dr Samuel Sloan, President, in the chair.

Alfred Bell Whitton, M.B., C.M., Banff, was elected a Fellow.

The President exhibited a model of the INCUBATOR in use presently at the Maternity Hospital, and alluded to the experiment being made with triplets.

Dr Murdoch Cameron exhibited—(1), a FŒTUS at the sixth week, with membranes entire; and (2), a FŒTUS at the fourth week, with amnion, chorion, and remains of umbilical vesicle.

The discussion upon Dr J. K. Kelly's paper was then opened by *Mr J. Stuart Nairne*, who thought the essayist had been fortunate in never having had a case which failed to be delivered by means of straight forceps. He could not imagine a normal pelvis admitting of such distensibility as would be evidenced by the "erection of the hip" mentioned. Nevertheless considerable luxation did take place normally, but the essayist had omitted reference to that joint which was most capable of luxation, viz., the lumbo-sacral. This joint by its free distensibility admitted not truly of a dilation of the pelvis, but of an adjustment of the fœtus in relation to the pelvis. He objected to and repelled the views expressed with regard to perineorrhaphy and its frequent requirement.

Dr Park thought "bad-nursing" could not be received as a definite cause of maternal death, and that Dr Kelly was wrong in excluding ergot from his armamentarium. Though he did not believe in the routine use of ergot (or any other drug), it was far too valuable an aid to obstetric art to be absolutely discarded, and Dr Kelly was to be congratulated in never having had a death from post-partum hæmorrhage or a case requiring Cæsarean section or craniotomy.

Dr Reid disagreed with him in respect of rupture of the perineum; thought straight forceps dangerous when applied at the pelvic brim; and that the danger of first labours was greater than those of subsequent ones.

Dr Abram Wallace doubted whether such an amount of distensibility as Dr K. reports was possible in a normal pelvis. He granted some lateral expansion, and also the lumbo-sacral movement referred to by Mr Nairne.

Dr Oliphant thought moderate ruptures heal very well without stitching.

Dr Ritchie mentioned that Lawson Tait objected to stitching up after labour immediately, as so doing was liable to lead to fistula.

Dr Sloan thought Lawson Tait's remark applied to ruptures of a certain kind only. He thought straight forceps inadequate for use at the brim, and that a double curved instrument should always be preferred when operating hereat. Touching the matter of the "pad," he placed his somewhat higher than "over" the uterus. He gave ergot in routine, as it kept the uterus "retracted." He had observed distensibility of a marked kind in one case only, and the patient was obliged to wear a tight binder round her hips after labour, in order to admit of free locomotion. With regard to ruptures, he did not regard a fourchette tear as a rupture at all, as it takes place in nearly all cases. He reckoned three degrees of rupture, viz.,—(1), where only a few fibres are torn; (2), where the tear goes within a ¼ inch of the anus, and should be stitched thoroughly and at once; and (3), where the tear goes through the anus, and perineorrhaphy is a matter of course. No one had alluded to rupture of the posterior wall of the vagina, which also involved immediate stitching.

Dr Kelly, in reply, adhered generally to the positions taken up in his paper, and defended them.

Dr George Halket then read a paper on the OBSTETRICAL AND GYNÆCOLOGICAL CLINIQUES OF BERLIN AND VIENNA, in the course of which he recounted in condensed form, artistically set off by touches of genuine humour, his experiences during a sojourn of six weeks in Vienna in 1882, and a lesser period in Berlin. Especially he described the operation of ovariotomy as performed before the clinical class, and the induction of premature labour as performed under similar circumstances.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

CHLORAL HYDRATE AS A VESICANT.—For blistering purposes chloral hydrate is fully as efficacious as cantharides, while it is free from the inconveniences attending the employment of this latter agent. The chloral should be reduced to a powder, and a layer of it placed on a piece of common adhesive plaster, taking care to leave a margin between the edge of the layer of chloral and that of the plaster. This is then warmed over a gas jet until the chloral becomes discoloured and melts, when it should be immediately applied on the spot for the operation, the skin covering which is to be anointed beforehand with olive oil or lard. The anæsthetic properties of the chloral prevent any unpleasant sensation, and fifteen minutes is the maximum period of time during which the application may be continued. If the above-mentioned precaution be taken of anointing the skin, its vitality is retained, and the presence of an open wound is avoided, the skin adhering again as soon as the exudation is evacuated. Another advantage consists in the absence of the risks of poisonous effects consequent on absorption, a by no means uncommon sequel to the use of cantharides (*Medical Press*, October 1886).—*Therapeutical Gazette*, January 1887.

Apocynum Cannabinum in Dropsy.—In reply to the query of Dr Peters, I have to report the history of a few cases of pleurisy, with effusion, treated with apocynum cannabinum. I prefer to give those cases that fell in my hands after the effusion was well marked.

Case I.—J. C., aged 13, male, January 15, 1885, was taken sick, January 7, with initiatory chill, followed by high fever, cough, and rapid respiration; effusion well marked; level of fluid at fourth rib. *Treatment.*—Fl. ext. apocynum cannabinum, ℥j.; five drops every three hours. *January* 19.—Feels better; fluid disappearing; at level fifth rib. *January* 29.—Fluid entirely gone; appetite good; temperature and pulse normal; discharged.

Case II.—*January* 24, 1886, George P., aged 18, barber, taken sick with pain, fever, and rapid respiration. *January* 1.—Confined to bed two weeks; improved, and was able to walk out; had been treated for intercostal neuralgia. Physical examination revealed the fact that his left pleural cavity was entirely filled with fluid; was given fl. ext. apocynum cannabinum 20 drops every four hours; free catharsis took place after the fourth dose; drug diminished to 10 drops every four hours; rapid recovery took place, with complete expansion of lung and normal respiration, February 15.

Case III.—*March* 28, 1886, John C., aged 14, waiter-boy on railroad. After violent exercise, February 10, 1886, was taken with chill, followed by fever, cough, slight pain inside. Nothing was done for him until he came to me, March 28; right pleural cavity nearly filled with fluid. *Treatment.*—Fl. ext. apocynum cannabinum; ten drops every four hours were given. Lived six miles from me, so did not see him again until June, when I met him by accident. His story was that he got well in a week, and went to work May 3, 1886.

Case IV.—Mrs P., aged 43. History of latent pleurisy of four weeks' standing of left chest; complete flatness on percussion; heart to right of sternum; no vesicular murmur in lung. Change of position did not alter the physical signs. Advised aspiration, which she would not consent to until drugs had been tried. *Treatment.*—Fl. ext. apocynum cannabinum, gtt. xv.; potassæ iodidi, gr. viij.; per dose every four hours. *May 5.*—Feels a little better; treatment continued, and by May 18 all fluid had disappeared, and she has remained well since.

CASE V.—Susie G., aged 23; shop-girl. History of latent pleurisy; right chest filled with fluid to fourth rib; has been treated for intercostal neuralgia. *Treatment.*—Fl. ext. apocynum cannabinum, gtt. x., every four hours. Fluid rapidly disappeared, and she remained well until December, when I was called by Dr Winslow to see her at his office. She then had aphonia, from ulceration of the vocal cords, which is undoubtedly laryngeal phthisis. There was no fluid in the chest. He has since lost track of her.

CASE VI.—Harris B., aged 3, son of Dr Beckwith, of Ithaca. Taken sick July 10; chills, fever, slight cough, and pain in abdomen. Was asked by the doctor to see him July 18, when we found right chest nearly filled with fluid. Advised fl. ext. apocynum cannabinum, gtt. ij. every two hours, until free catharsis took place, then to diminish to one drop. The fluid entirely disappeared in fourteen days. He has since remained well.

CASE VII.—Grace C., aged 4 years. History of acute pleurisy, commencing November 10; right chest filled with fluid. *Treatment.*—Fl. ext. apocynum cannabinum, gtt. iv. every four hours; complete recovery in fifteen days (by J. A. Lewis, M.D., Ithaca, N. Y.)—*Therapeutic Gazette,* January 15, 1887.

PILOCARPINE IN RHEUMATIC TETANUS.—Brünauer treated a case of tetanus of rheumatic origin, where the slightest irritant produced violent spasms, with subcutaneous injections of pilocarpine, 2 centigrammes in each dose. Other modes of treatment tried during five days had failed. The injections, with use of the chloral at night, resulted in recovery after an illness of two weeks (*Deutsche Medizinal Zeitung,* No. 61, 1886).—*Therapeutic Gazette,* January 15, 1887.

PERMANGANATE OF POTASSIUM IN AMENORRHŒA.—I have been able to follow forty-three cases, and find that in the class of robust persons who have recently made a sea voyage, have then menstruated scantily, or missed altogether two or three times, that the permanganate of potassium, given in 1-grain doses three times daily after meals, up to within one week of the expected catamenia, then the dose to be increased to 2 grains three times daily, it has been effectual and permanent in each instance—the number of cases of this class being fifteen. Out of seventeen patients who were anæmic or chlorotic, only two patients derived benefit from the permanganate of potassium treatment employed alone. One of these, a chlorotic, at her next epoch, she having missed four months entirely, and the two preceding periods being very scanty, the flow lasting only a few hours, had such profuse flow that I felt it necessary to give ergot. The remaining fifteen patients derived benefit, more or less, only by general tonic treatment, viz., hygienic, dietetic, and medicinal. The next class of patients, eleven in number, were well nourished, some plethoric, and no particular cause could be found for the amenorrhœa. In seven of these the remedy produced the desired effect—one time only in three for two months, and in one for three periods; after that the drug had no effect. In three of the first seven cases the epoch was established again regularly and normally, without any more cause than could be found for the origin of the complaint.

My conclusions, then, are,—That in such as the first class of patients cited, the permanganate of potassium is "the" remedy. In the second class, it is of service only when employed in connexion with such treatment as would have a tendency to overcome or help the cause of the amenorrhœa; and in the third class the results are very variable—failures being, in my experience, the preponderance. With the binoxide of manganese my experience has been too limited to speak. The administration of the remedy has given the best satisfaction in my hands when the crystals are put up in ordinary gelatin-capsules, one capsule to be taken after eating, followed by a glass of milk or soda-water. The gastric disturbance has then been usually very little, or none; but four patients out of the total number of forty-three have had much cause to complain. The number of patients for whom the remedy has been prescribed has been considerably larger; but, as we all know in public practice, it is very difficult to keep patients under observation, as is also the case with many private cases. The mentioned number, however, have been successfully observed by me. Dr Billings, I believe, mentioned the usefulness of the potassium salt also in menorrhagia. I have tried it also in this condition a few times, but with total failure. The hydrastis canadensis has given fair satisfaction for this complaint in my hands. Lately the latter drug has also been recommended by Mendes de Leon in this and other pathological conditions of the female organs of generation, such as dysmenorrhœa resulting from displacement of the uterus and chronic pelvic cellulitis (by Dr H. J. Boldts, New York).—*Therapeutic Gazette*, January 15, 1887.

Cure for Warts.—Take 15 grains of corrosive sublimate and dissolve in 1 ounce of collodion. Brush the warts carefully once a day with this solution. This remedy is more efficacious and more convenient than other recommended procedures (*Zeitschrift d. Oester. Apotheker.* v. Sep. 1886).—*Therapeutic Gazette*, January 1887.

Oleate of Menthol.—Professor Remington of the Philadelphia College of Pharmacy, recommends a solution of menthol in oleic acid. He says, "It is best prepared by placing 200 grains of menthol in a test tube or beaker, adding half an ounce of oleic acid, and gently heating till solution is effected." This preparation is readily absorbed by the skin.—*Therapeutic Gazette*, January 1887.

MEDICAL PERISCOPE.

By Francis Troup, M.D.

Berlin. Klin. Wochensch., Nos. 1 and 2, 1887.—Doctors Cahn and Hepp, of Prof. Kussmaul's clinique, give the results of their experience of the value of antifebrin (acetanilid) as opposed to other antipyretics. This body is formed from acetic anilin by a high temperature depriving it of water.

$$\underset{\text{(Acetic anilin.)}}{C_6H_5NH_3.O.COCH_3} = \underset{\text{(Acetanilid.)}}{C_6H_5NH.COCH_2} + H_2O.$$

It is a stable body, can be sublimed unaltered, and at ordinary temperatures is not altered by acids or alkalies. It forms a light crystalline powder, soluble in 160 parts of cold and 25 of boiling water. It is easily dissolved in alcohol, ether, and brandy or strong wine. It causes a slight burning sensation on the tongue, but has no peculiar taste.

Lately the two authors have made trial of it in sixty cases,—typhoid, rheumatism, pneumonia, erysipelas, phthisis, etc.,—and are convinced that ·25 of a gramme of antifebrin are as efficacious as to magnitude and duration of its operation as one gramme of antipyrin.

It is better to begin with a test-dose of ·25 of a gramme; and in many patients with chronic fever—for example, consumptives—this amount suffices to prevent the evening rise of temperature, especially if given about mid-day. If a quarter gramme dose is not sufficient (and this will probably be the case where fever is continuous) to bring about a considerable remission, then half a gramme should be given at once, or in two doses, with an interval of an hour. It is preferable to give the powder suspended in water or in wafer paper. It is best to give the dose when the natural remission is about to begin, and one large dose to secure a radical defervescence in the first place should be supplemented by divided smaller doses to ensure a continuance of the apyrexia.

They have not found it necessary to exceed two grammes in the twenty-four hours, but double that amount may be given safely. The authors themselves have taken as much per day without discoverable change in their feeling of health, appetite, or cerebral functions.

But although this is the case, yet a certain amount of prudence, till the susceptibility of the individual has been ascertained, is necessary. They have seen medium doses send the temperature well below normal in individuals weakened by disease and misery.

Antifebrin is well borne by stomach and bowels. Seldom does it cause vomiting, and in this respect is much better tolerated than antipyrin. Irritation of kidneys or urinary passages does not occur, and in several typhoid cases, with irritation of bladder and hæmaturia, the medicine was given, and seemed to act rather favourably than otherwise on those complications.

When a sufficient dose has been given, the fall of temperature is noticeable within one hour. Defervescence next takes place, with reddening of skin, and more or less of perspiration. Occasionally miliary rashes are seen, but as yet they have seen no others. Should temperature fall very decidedly, the skin becomes pale, or even a little cyanotic. This change of colour is seldom excessive, and can scarcely as yet be looked upon as token of "anilism."

The duration of the antifebrile effect accords with the degree and obstinacy of the fever, and the size and time of giving of the dose. The lowest point is usually reached in three or five hours; then follows at first a slow, then later a quicker rise of the temperature to its old height.

It is a noticeable thing that defervescence comes about without collapse or nausea, and that there is an increased feeling of comfort and of being better. The quantity of urine passed is also increased, and this perhaps may be traced to the general feeling of betterness causing patients to feel the greater need of food and drink. With the lowering of the temperature there is a corresponding slowing of the pulse and an increased tension of the walls of the vessels, as is shown by the authors in two graphic representations of the radial pulse before and after antifebrin in two cases of abdominal typhus.

But does antifebrin possess any specific properties besides its antipyretic ones? In typhoid and erysipelas it has not; in acute rheumatism it seems to have much the same effect as salicylic acid. In phthisical cases the authors sometimes succeeded, not only in suppressing the evening fever on the day on which the drug was given, but the fever remained away spontaneously the next day, to return on the third or fourth. Whether this was the "malice of accident" or a special action of the acetanilid in tuberculosis, the authors do not say.

In a case of intermittent fever, which quinine promptly squelched, antifebrin was perfectly useless.

The circumstance that antipyretic and antiseptic qualities often coexist made the authors try antifebrin also in this direction. A saturated solution of it in a sugary liquid did not ferment, or only very slowly. Milk did not become sour when shaken with a moderate amount of it; white of egg did not putrefy or only slightly. An alkaline flesh-infusion mixed with an equal volume of a cold saturated solution of antifebrin remained clear for days. Paramecia lose their power of movement. Experiments made to see whether it was a surgical antiseptic were not favourable; antifebrin does not dissolve in the wound secretions, swims on their surface, prevents them soaking the bandages, and thus the wounds are irritated.

It is sure that a certain quantity of antifebrin passes out of the system undecomposed with the urine; it is not so certain what becomes of the rest; it seems not unlikely that aniline is formed in the organism, and that the antipyretic properties of antifebrin may depend on the slow, constant disengagement of small quantities of aniline, which itself has the power of reducing pulse and temperature when given in the form of a sulphate; here the authors give a table where the salt was given in a late recurring typhoid.

When it has been ascertained that acetanilid, partly unaltered, partly as a sulphate, is excreted from the organism, it is not yet settled what becomes of the residue in the system.

Ibidem.—No. 1, 1887, Prof. Henoch draws attention to some remarkable cases of what he calls "*Purpura fulminans.*" Four cases are given, and all in ages varying from 9 months to 7 years. The first case, which is a sample of the whole, was in a five year old boy, who had a pneumonia of the left lower lobe. The crisis came on the eighth day, and for two days everything was normal, and also the urine. In the night of the second day after the crisis sudden pains arose in the left thigh, and at 5 A.M. there was seen on the left lateral thorax a purpura spot of 9 cm. length and 5 cm. breadth, surrounded by a rosy-red very sensitive border. On the left thigh a slight redness was noticeable at 6 A.M., purpura spots appeared on thigh and leg and on both upper arms. At 11 A.M. these spots had coalesced, and the whole under lateral part of the left thigh was black and blue; in the evening the left calf and right knee were hæmorrhagically suffused. Every organ was again explored, and nothing abnormal found. The temperature was 101°·8, the pulse 120, good; respirations 36. At 12 o'clock evening, almost the whole right leg, with the exception of the foot, had become blackish-blue. And now there was great anæmia and weakness, and pain necessitated injection of morphia. In other two hours the boy died collapsed. Urine was normal; there was no hereditary disposition to bleeding. The post-mortem revealed *nothing*. All organs sound; the pneumonia almost entirely resolved; in the arteries of the diseased extremities, which were examined to their minutest ramifications, there was no abnormality, and particularly no thrombosis. The other three cases detailed are similar to the above—sudden illness, rapid death. In one or two, large vesicles filled with bloody serum and yet having no gangrenous smell on the purpuric parts, the post-mortem in all of them being negative as to lesions save those on the skin.

It was characteristic of all the cases that there were no bleedings from mucous surfaces, and, therefore, morbus maculosus, Werlhofii, is excluded. The second characteristic was the rapidly formed ecchymoses, the celerity with which they coalesced, so that in a few hours the skin of a whole extremity became black and hard with infiltrated blood. Another important fact was the formation of bullæ, which had no time to form in the first case, as the fatal end took place in twenty-four hours. There was no gangrene, no smell. And lastly, the rapid course to the fatal end is very remarkable. There were no complications, and the Sections, with the exception of general anæmia, gave a positively negative result; particularly there was no trace of embolic or thrombotic processes.

Prof. Henoch regrets that he can say little about the explanation of these cases. Of the essential nature of purpura we know as good as nothing. He always thought that purpura was not so much to be looked upon as a simple disease-unit, but as a hæmorrhagic diathesis which could come to light under the most diverse circumstances. But the anatomical relationships of purpura are still very obscure; and although in recent times several investigators have detected certain microscopic alterations in the walls of the finest arteries, by which a peculiar brittleness of the same, and consequently a tendency to rupture is brought about, yet it is to be noted that purpura occurs where those alterations are not to be found; and on the other hand, investigations as to the condition of the smallest arteries in the first years of life have resulted in the discovery that the thickenings of the adventitia and muscularis coats, which were supposed to be characteristic of the so-called hæmorrhagic lues hereditaria, are normal at this tender age.

But even could we really look upon those vessel alterations as constant, and as the anatomical substratum of purpura-forms, still the four cases now related would not be explained, so long as we do not know the ætiological relations more exactly. The first came after a pneumonia, the second after doubtful scarlet fever, and one is tempted to suppose that there was some connexion between the bleeding and the infective disease. Of course a hæmorrhagic diathesis may and does follow scarlet fever, and measles sometimes; but here the purpura was of this fulminant kind, and in the fourth one there was no question of any precedent infective process—the child was absolutely sound up to the moment the purpura began. The ætiological moment was here also obscure. Of course, one thinks naturally of some anomalous form of acute exanthem—variola hæmorrhagica, for example. Prof. Henoch also excludes this idea, for since 1872 no case of smallpox had been seen in his clinique, and it would be wonderful were two cases to appear so close together in a smallpox form which is also one of its rarest varieties.

PERISCOPE OF MEDICINE, CLINICAL AND PATHOLOGICAL.

By G. A. Gibson, M.D., and William Russell, M.D.

The compilers of the Periscope consider it desirable to state that they do not necessarily endorse the views contained in any of the papers from which abstracts have been made.

Facial Deviation in Hysterical Hemiplegia.—According to the teaching of Todd and Charcot, one of the principal distinctive features of hysterical hemiplegia should be the absence of facial paralysis. This has almost been accepted as a law by many, while some hold that it is not by any means uncommon to have facial hemiplegia in these cases. Brissaud and Marie examine this difference of opinion, and begin by asking the following question :—Being given a patient seized with hemiplegia of the limbs and face, on what diagnostic signs could we say whether the hemiplegia was of organic or hysterical origin ? They consider the question under various heads,—(1.) Apoplectic onset, which is usually so characteristic of the organic form, is not sufficient, for hysterical cases sometimes originate thus; (2.) Hemianæsthesia constitutes a strong presumption in favour of hysteria, but this symptom may show itself also in the course of organic lesions; (3.) Tremor and hemichorea may occur in either, and there is no difference in the characters in the two classes; (4.) In common hemiplegia the lower limb is less affected than the upper; in the hysterical hemiplegia the reverse holds, but there are exceptions to both; (5.) The mode of walking is of importance: in organic hemiplegia, the leg, instead of being bent and carried straight forward and placed in front of the other, covers the arc of a circle with its convexity outwards while being carried in front of the other, and is kept rigid; in hysteria, on the other hand, the paralyzed member is never carried in front of the other, but is dragged after the sound limb, which is always kept in front; it is also slightly bent; (6.) In organic hemiplegics contracture should be less strong after repose, and in the morning on awaking; in hysterics, on the contrary, contracture persists as intense in sleep as in waking, and is not diminished in the morning; (7.) Muscular atrophy apparently may occur in both; (8.) In organic hemiplegia the tendinous reflexes are increased; in hysteria they are usually normal, or more or less diminished, but there are also exceptions to this. The diminution or absence of the pharyngeal reflex is often of great diagnostic value in hysterical cases, but it, too, may be due to organic lesion. In resuming, the authors state that there is no objective character which enables us to distinguish with certainty an organic from a hysterical hemiplegia.—*Le Progrès Médical*, 29th January 1887.

Gastric Digestion.—From a series of experiments on pepsinogen and pepsin, Langley and Edkins conclude that pepsin is rapidly destroyed by alkalies and alkaline salts even in dilute solutions; the mere act of neutralizing an acid solution of pepsin may destroy most of it. The presence of proteids lessens this destructive influence, probably by combining with the alkali or alkaline salt, for when the alkali is increased the proteids must also be augmented. Pepsin obtained from the frog is not so easily affected as that of mammals. The aqueous extract of the gastric mucous membrane of a hungry animal does not lose peptic power on brief alkaline treatment; it follows that pepsinogen, with little or no pepsin, is present in the gastric glands in hunger. The difference between pepsinogen and pepsin is one of degree, not of kind. The former is not so easily destroyed by alkalies as the latter. It is easily changed into the latter by the action of dilute mineral acids. It is not affected by oxygen, but it is destroyed by carbonic acid, this action being delayed by peptone, albumin, and globulin. Carbonic acid also destroys pepsin, but less readily than pepsinogen. Both are rapidly destroyed by heating to 55° or 57° C. As pepsinogen is rapidly changed into pepsin, it is not easy to determine whether the latter is ever present in the gastric glands during digestion. It is sometimes, but not always, found in an extract from them, so that it is probably formed from pepsinogen in the glands themselves by the acid soaking into the gland cells. The writers are of opinion that the "excretion" of pepsin goes on hand-in-hand with its formation from pepsinogen.—*The Journal of Physiology*, Vol. vii., Parts 5 and 6.

INVESTIGATIONS ON ICTERUS.—Müller finds from a long series of observations that when the bile is prevented from entering the intestines there is no interference with the digestion of starchy food, but little alteration in that of albuminoids, and, on the other hand, great influence over that of fatty substances. In health only about 7 to 10 per cent. of the fat is passed in the fæces, but when the bile is absent from 55 to 78 per cent. is passed. In absence of the pancreatic juice the digestion and absorption of starchy food is not in any way altered, but it seems as if the digestion of albuminoids were not so perfect. It could not be determined that the motions contained more fat when the pancreatic secretion was absent, and it is doubtful if steatorrhœa be the result of diseases of the pancreas. In diseases of the absorbing apparatus of the bowel (such as waxy disease, tubercular disease, disease of the mesenteric glands, enteritis) the absorption of fat suffers in a higher degree than that of the other constituents of the food, and in such cases the motions have the characters of fat stools. It seems as if, through the absence of the pancreatic secretion, there were no *quantitative*, but, on the other hand, a *qualitative* change in the condition of the fat in the fæces. The pancreas acts specially on the neutral fats. The melting point of fat in the fæces is higher, and exceeds that of the fat of the food more when the absorption of fat has been more complete. Easily melted fats are more readily absorbed than those with higher melting points. The presence of acicular fat crystals in the fæces is a sign of deficient fat absorption. These are found in icterus and other maladies with disturbance of fat absorption. They arise from free fatty acids, and from lime and magnesia soaps with the higher fatty acids. In cases of slight icterus no pathological change in the nitrogenous metabolism is to be determined, and the behaviour of sulphur is as in health.—*Zeitschrift für klinische Medicin*, January 1877.

PRIMARY RENAL CONGESTION.—M. Albert Robin contributes a long article on this subject. He holds that exposure to cold after muscular effort or overwork is the etiological factor. As regards its mode of action, the most plausible hypothesis is that it is a reflex *fluxion.* But how does this sudden fluxion act, and by what mechanism are the general symptoms produced? Todd held that the cutaneous secretions were arrested by the cold, and that the organic products which ought to have been eliminated by the skin went by the kidneys, which they irritated. This view the author rejects. If it were correct, he thinks we should find in the urine some of the products, whereas the total solids eliminated undergo a sudden and marked diminution. He cites a case in support of this, in which amelioration set in on the fourth day, and coincided with a large discharge of organic matter. The action of cold on the skin and the reflex renal fluxion constitute the *first* morbid step. The congested kidney becomes for the time insufficient, and the discharge of the waste products is hampered; the retention of these products forms the *second* morbid step. The reaction of the organism in presence of these retained products depends on two conditions: their quantity and their quality, and the duration of their retention. To a small quantity, a normal quality, and short retention, corresponds the ordinary fever (*fièvre dite commune*) of renal congestion, which is marked by a rapid discharge. To a greater quantity, a more noxious quality, and a longer retention, corresponds the typhoid form. These are the two possibilities of the *third* morbid step. Although these two forms are usually recovered from, three eventualities are possible,—(1.) If the congestion lasts long, and thus elimination is retarded, compensatory œdemas are produced. Albumen persists, and the functional alteration in the renal epithelium becomes organic, and the case passes into one of acute Bright. (2.) If the quantity of waste products retained is considerable, if the reflex acts have led to very intense organic destructions, the passage of these large quantities of waste products for days irritate the organ, and lead to a return of an augmentation of the albuminuria. (3.) Should the congestion supervene in an individual in whom the kidney was not in a state of absolute integrity, the symptoms due to retention, that is to auto-intoxication, may assume the utmost gravity, and the patient may succumb. Of this last type M. Robin records at length a very typical case, in which he lays special stress on the fact that in it the total solids and the urea excreted diminished as the patient became worse, whereas in the ordinary form, where recovery is the rule, the solids and the urea increase.—*Gazette Médicale de Paris*, 13th and 20th November 1886.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

Treatment of Lupus by Erasion.—Stowers considers that lupus is more intimately associated with phthisis and destructive pulmonary disease than is generally allowed. Phthisis occurred in 52 per cent. of his cases in one or more members of the patient's family. In using the sharp spoon he employs ether inhalation in extensive cases; and to enable the soft friable tissues to be more easily recognised and removed it is useful to empty the bloodvessels by pressure, and control them with a metal ring attached to a handle during the actual process of scraping. Subsequently, free bleeding should be encouraged, and, if excessive, restrained or arrested by the application of ice-cold water. After scraping, he cauterizes by inserting a stick of nitrate of silver into the cavities and sinuses, and dresses with lint soaked in 1 in 40 carbolized oil. Seven cases are tabulated. In six no disease remained after from one to five repetitions of the operation. In the seventh, after seven operations, the entire cure was probable, but not quite certain. In it the duration of treatment was nine years, in another three.—*Practitioner*, October 1886.

The Iodoform Rash.—This drug is employed so freely that Treves has done well to direct attention to the dangers which may arise from its use. Those are iodoform poisoning and a rash.—1. *Iodoform Poisoning.*—The symptoms may be divided into two categories, the distinction depending mainly on the character of the nerve disturbances. (*a.*) The evidences of poisoning develop slowly and insidiously, and are met with more frequently in old or debilitated persons. There is malaise, loss of strength and appetite, and a feeling of depression, with moderate fever and a rapid pulse. Sleep is broken at first, and headache is not uncommon. Then succeed apathy and drowsiness, with wasting and paralysis. The mind becomes weak, and the patient, unless the drug is discontinued, dies comatose. (*b.*) The more acute form is met with in younger and more vigorous patients. The headache is more intense. The sleep is broken, or the patient is quite sleepless. The temperature is high without any appreciable cause, and the pulse is remarkably rapid. The mental symptoms resemble acute mania. The clinical manifestations vary according as the absorption of the drug is continued, modified, or interrupted. 2. *The Iodoform Rash.*—This seems rare. In a case recorded by Treves, a wound made in the arm of a girl aged 13, for the treatment of an ununited fracture, was dressed with iodoform for three weeks. The temperature then rose and the pulse became rapid, and a crop of vesicles appeared on the region dusted with the powder. Those were followed by a more general eruption in the form of patches, which consisted of a number of closely packed papules. These papules were all less than a pin's head, and were set upon a pink erythematous base. The exanthem lasted three days. While the eruption was out the wound, which had nearly healed, became unhealthy. The other recorded cases would seem to indicate that the usual eruption is that of vesicles or papules on an erythematous base. Iodoform should be used with especial caution in nervous, excitable, and hysterical subjects.—*Practitioner*, Oct. 1886.

PURPURA AND ERYTHEMA.—While an exhaustive paper by E. Wagner serves to corroborate the view that these two complaints are closely related, it cannot be said that much additional light has been thrown on the nature or the etiology of either. Wagner includes urticaria with erythema multiforme and erythema nodosum in the same class; and he compares with them three forms of purpura. In purpura simplex, which corresponds to urticaria, hæmorrhage is found in the skin only. In purpura hæmorrhagica blood is present in the mucous membranes and the internal organs. This corresponds, in his opinion, with erythema multiforme. In peliosis rheumatica there are pains in the joints, and even articular swellings. This corresponds to erythema nodosum. Why in certain cases of tubercular erythema hæmorrhage occurs so constantly, so quickly, and so severely, cannot be explained by the youth of the patients, nor from their anæmic condition. Some hitherto unknown cause exists, as in hæmorrhagic smallpox. The results of treatment are, in his opinion, doubtful. Neither local nor constitutional treatment seems to influence the manifestations of erythema nodosum, with or without coexisting purpura on the skin or mucous membranes. It is self-evident that salicylic acid or its salts may be useful in the joint affections. Yet in cases cited by him, while the pyrexia and the joint complications regularly disappeared under suitable doses, the cutaneous lesions were not in the least influenced, and a return of the fever and the joint affections was under this treatment very frequent. Trousseau, who at one time laid great weight on the value of quinine in removing the articular pains, came to the conclusion that these usually subsided spontaneously.—*Deutsches Archiv für klinische Medicin*, October 1886.

CLIMACTERIC ECZEMA.—Eczema occurring within the range of the menopause has not, in Bohn's opinion, received the attention which its frequency, peculiar localization, obstinacy, and tendency to recur appear to demand. A period of time of from twelve to fifteen years must be allotted to the climacterium, within which the conditions arising from the systemic disturbance exert their influence in inducing eczema. The statistics of Bulkley and of Bohn himself would show that only at two decennial periods do the number of women exceed those of men, among those affected with eczema. Those periods are between 10 and 20, and between 40 and 50, the periods, namely, when menstruation is being established, and when, as a rule, it ceases. As a rule, too, the monthly loss has ceased when the eczema appears. In the majority of instances in which eczema is concurrent with continued menstruation, the latter shows variations and irregularities such as often precede for a long time complete cessation. Not only is there a marked tendency to relapse in this form of eczema, but there appears to be established on certain regions of the body a predisposition to outbreaks of eczema, which proneness may continue long after change of life, even into the sixtieth or seventieth years. Another peculiarity is its long persistence. It betrays no tendency to spontaneous cure, and thus among women of the lower classes cases may be met with which have lasted many years. There is thus a relation between the protracted duration and the proneness to relapse, and the chronic cause, the slow revolution in the female system. More than three-fourths of the cases occur on the scalp and ears. The eruption may remain confined to one of these localities, or more frequently extend from the head to the ears, or conversely. The extremities also may be attacked alone—sometimes merely the hands and fingers; and when such is the case, the head and ears may be attacked later. Bohn has never seen it on the trunk. The form is like the localization, tolerably uniform. The scaly and weeping eczema predominates in contrast to the impetiginous and pustular variety, affecting the head, ears, and face in obese infants and strumous children. Itching is well marked. Such climacteric eczemas may, from their commencement to their termination, be no more than a slight or tolerably considerable amount of desquamation, with some loss of hair, which is liable, however, to be aggravated into a moist condition by both internal and external irritants. As to treatment, we cannot now participate Rayer's views as to its incurability. White precipitate externally and arsenic internally are nearly specifics against climacteric eczema. It cannot be denied that the relatively rapid efficacy of this treatment is strange when we take into account the chronic foundation of this eczema. Of the true nature and mode of origin of this eczema we can venture little explanation. As in all other forms of eruption which are connected with the uterine functions, it is questionable whether these prepare the soil for the skin affection, or directly take part in its evolution. While at the menopause there is uterine atrophy, there is at the same time, as in castrated animals and man, a strong tendency to the deposition of fat. There are also disturbances in the nervous system and in the circulation, which latter give rise to characteristic congestions—probably of vaso-motor origin—and hæmorrhages. More than this we do not know about the menopause.—*Deutsches Archiv für klinische Medicin*, October 1886.

SOME ODD-LOOKING DISORDERS OF THE SKIN PRODUCED BY COMMON CAUSES.—From a pithy lecture by Dr Nevins Hyde we extract the following:—A fair skinned English woman, who had come to America three weeks before as a steerage passenger, presented herself with a skin eruption affecting the face, arms, hands, and to a small extent the feet. The integument of the arms was infiltrated, tense, shining, hot, and of a bright reddish hue, and covered here and there with blebs. On the face the skin was less tumid, but sprinkled with minute papules, with bullæ and crusts. A physician whom she had consulted to obtain relief from the intense burning and itching sensations which accompanied the lesions, regarded it as syphilis, and prescribed iodide of potassium. The whole symptoms were due to mosquito bites acting on the sensitive and tender skin of one unacclimatized. The treatment consisted in the application of cold starch paste, to which a drachm of zinc oxide had been added to each pint, and when by this some relief had been attained, dusting with powdered starch. Of course prophylaxis from further annoyance was to be obtained by suitable curtains. Another case was that of a vigorous young man who came from Kansas, suffering from what he called "prairie itch." He complained of an intense itching, with nocturnal aggravation, produced by an eruption affecting chiefly the trunk and thighs, and avoiding the face, hands, and feet. The skin was found soaked in sweat, and in the regions named covered with minute bright red papules, and excoriations and thin crusts. The integument of the trunk was of a very bright red hue over large areas. The man wore, for supposed rheumatism, thick flannel under garments, dyed of the popular scarlet shades produced by the cheaper dyes made of aniline and picric acid. The eruption dated from the time of commencing to wear these under garments. In treatment those were directed to be replaced with soft white "Lisle-thread" ones, worn next the skin. The skin itself to be gently bathed with very hot water strained from bran, and then anointed with a salve composed of Hebra's diachylon ointment, one part, and vaseline two parts. "Cold cream and dusting with starch will complete the cure, which will be best initiated by a few days' rest in bed." An unmarried man, twenty-three years of age, sallow-faced, thin, and hollow eyed, with the facial expression we are apt to discover in the confirmed sexual hypochondriac. His scalp was for the most part covered with short cut hairs, but parallel to the sagittal suture, and somewhat to the right side of it, stretched a bare ribbon-like space. He had acquired the habit of plucking out the hairs over this space as fast as they grew, and had shaved his beard because he had acquired the vicious habit of plucking that out also. This was one of those wretched perversions of habit which affect a few men in every thousand, and of which picking the nose, titillating the genitals, boring out the ears, cracking the knuckles, epilating the eyelids with the fingers, scratching the anus, are other examples. Some are never content save when manipulating their own persons. More than half the treatment is the establishment in the mind of the patient the conviction that he is under the direction of a man who has got at the core of his case, and who has the courage to be merciless in driving him out of his habits while pitying his condition. In this case the scalp may need to be kept shaved for a time, while the hands and brain are busied with exacting labour. A fourth case was a man of twenty-nine, anæmic, and who had suffered from acne for ten years. The pustules had been freely incised, and large doses of iodide of potass prescribed to drive out the disease. This combined treatment had resulted in the development of innumerable islets of keloid. Bad enough as this was on the back of a man, the result, as Dr Hyde observes, might be infinitely more serious on a woman's face. He recommends the acne pustules to be carefully opened with a fine needle properly disinfected.—*Philadelphia Medical News*, Dec. 4, 1886.

LICHEN RUBER MONILIFORMIS.—Under this name Kaposi describes a curious variety of lichen ruber planus. The patient was a Galician, who had suffered from the disease for fifteen years. The papules of lichen planus were ranged in lines, which followed a longitudinal direction, were fairly symmetrical, and affected chiefly the throat and neck, and the flexor aspects of the joints. But the papules had increased in size till the general appearance of the ridges so produced was that of a string of pink coral beads, or a strip of keloid. The surface of these cords was smooth, shining, and not scaly, and tender to pressure. Besides these, there was the ordinary papules of lichen planus, and pigmentary macules, the result of their involution. The occurrence of the verrucose form is sufficiently common, but this enlargement of the papules to large knobs, and the arrangement of them as knotty ridges, has not hitherto been observed. They were not of the nature of keloid, since sections revealed merely a dense infiltration of cells and nuclei in the sub-papillary layer of the corium, without a trace of organization or of formation of connective tissue. There were also overgrowths downwards of the hair root sheaths, as described by

Newmann in lichen ruber. Between the 30th April 1886 and the 10th August he received thirty-eight subcutaneous injections of arseniate of soda, and was dismissed considerably improved.—*Vierteljahresschrift für Dermatologie und Syphilis,* IV. Heft, 1886.

SCARLATINA AND SCARLATINIFORM ERUPTIONS.—Atkinson discusses these as following injuries and surgical operations, and concludes,—1. Unprotected persons who have suffered injury, or who have undergone surgical operations, are rather more liable to scarlet fever than the unprotected healthy. This is probably due to diminished power of resistance to disease, and because the influence of scarlet fever is more wide-spread, and is apt to escape attention; 2. When said eruptions prevail epidemically after injuries and operations, it may be concluded that true scarlet fever is present; 3. Septicæmia is occasionally accompanied by a scarlatiniform rash, which does not depend on the scarlatinal poison; 4. Medicinal eruptions, especially those from cinchona and its preparations, not infrequently follow injuries and operations. These rashes are probably for the most part usually attributed to true scarlet fever or septicæmia.—*Journal of Cutaneous and Venereal Diseases,* Oct. 1886.

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.—The following gentlemen passed their final examination for the degree in Medicine at the sittings held on 4th February 1887, and were admitted L.R.C.P. Ed.:—Hugh M'Callum, Pitlochry; Fred. Edwin Daniel, Durham; Joseph Birt, Brighton; Herbert Cæsar Hawkins, Eastbourne.

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS, EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.—The following gentlemen passed their final examination for the triple qualification in Medicine and Surgery at the sittings held in January 1887, and were admitted L.R.C.P. & S. Ed., and L.F.P. & S., Glasgow:—William Tiplady, Orkney; William Henry Karney, Edinburgh; James Cochrane Carlyle, Toronto; John Hay, Wishaw; Joseph Orphino Pinto, St Thomas's Hospital, London; Ronald Angus Daniel, London; Hugh Owen Hughes, Wales; Edmund Raphael Kavanaugh, London; William George M'Evoy, London; Frederick Primrose, M.D., Nova Scotia; Eugene Francis Hogan, Killaloe, Co. Clare; J. A. Kerr Wilson, M.D., Ontario; Charles William James Chepinell, London; John S. Swindell, London; William Fry Garrett, Manchester; Vincent Edward Nazareth, London, E.C.; Frederick Paul Mandel; James Darbyshire, Denbighshire; Richard Collier Coatsworth, Toronto; Francis Augustus Homfray, Darlington; Samuel Thomas Browne, Edinburgh; John Francis Nelly, Melbourne; Frank Arthur Sweetnam, Cork; Michael Moran, Newmarket on Fergus, Co. Clare; Henry William M'Caully Hayes, Edinburgh; William Ferguson Dickson, London; J. G. Morrison, Edinburgh; Herbert Leslie Gordon, Edinburgh; H. Clifton Hughes, Edinburgh; Albert Richard French, Co. Cork; Arthur Thomas Wills, Birmingham; Charles D. Stewart, Edinburgh; Louis Septimas Francis de Rohan Norman, Edinburgh; Francis Hammick Douglas, Edinburgh; John Alexander Calderwood, Ayr; James Reid, Selkirk; Edmond Ryan, Liverpool.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.—The following gentleman passsed his final examination at the sittings held in January 1887, and was admitted L.R.C.S. Ed.:—Joseph O'Connor, M.D., Castleisland, Ireland.

British Medical Service.—List of Surgeons on Probation in the Medical Department of the British Army who were successful at both the London and Netley Examinations, 7th February 1887.

No	Name.	Marks.
1.	Morgan, F. J.,	5785
2.	Horrocks, W. H.,	5783
3.	Hale, C. H.,	5657
4.	Thurston, H. C.,	5476
5.	Scott, B. H.,	5316
6.	Poole, W. C.,	5261
7.	Julian, O. R. A.,	5058
8.	Raymond, G.,	5056
9.	Burnside, E. A.,	5032
10.	M'Culloch, T. C.,	5020
11.	Hinde, A. B.,	4951
12.	Reily, A. Y.,	4886
13.	Cockerill, J. W.,	4851
14.	Ritchie, J.,	4796
15.	Hore, H. St G.,	4795
16.	Macdonald, S.,	4741
17.	Corcoran, E.,	4679
18.	Watson, A. C.,	4628
19.	Gray, E. W.,	4621
20.	Stiell, D.,	4605
21.	Salmon, L. E. A.,	4552
22.	Wade, G. A.,	4519
23.	Minniece, J.,	4489
24.	Penton, R. H.,	4475
25.	Holt, M. P.,	4442
26.	Gray, W. L.,	4390
27.	Browne, E. G.,	4341
28.	Morgan, J. C.,	4262
29.	Pocock, H. J.,	4247
30.	Hilliard, G.,	4230
31.	Elliott, C. R.,	4193
32.	Young, C. A.,	4179
33.	Bullen, J. W.,	4150
34.	Weir, C. J.,	4140
35.	Inniss, B. J.,	4123
36.	Thacker, R. C.,	4112
37.	Murphy, W. N.,	4109
38.	Clark, S. F.,	4073
39.	Hassard, E. M.,	4039

Dr Holub, the German physician and explorer, has written to a friend, who has published his letter in the *Cape Times*, making a suggestion which is well worthy of attention. He suggests that a congress of medical men should be convened in London, with the object of fully considering the etiology and the prophylactic and therapeutic treatment of malaria. He thinks the subject should be thoroughly investigated, and certain standard rules for the treatment and prevention of the malady arrived at. He says that he has accumulated, during his residence and travels in South Africa, a vast amount of information in connexion with the disorder, which he hopes will be of use in elucidating the subject.

Messrs Christie & Co., London, have sent sample of St James's "Rum" from Martinique. It is an excellent, clean, well matured spirit, with considerable body and delicate flavour, well suited for invalids who have tired of brandy and whisky, and yet require an easily assimilated stimulant. It has been matured in wood in the Tropics fourteen years before bottling.

The Wonderful Drug Clerk.—The most satirical shot at illegible prescriptions that we have yet seen is the following from the *Medical Age*:—A gentleman received a note from his lawyer, which he was unable to decipher. On his way to his office he met a friend at the door of a drug store. The friend, after vainly attempting to read the note, suggested that they step inside and hand it to the druggist, without comment. The druggist, after studying it in silence for a few minutes, stepped behind his prescription case, and in a short time returned with a bottle of medicine, duly labelled and bearing directions. When the gentleman saw his lawyer, he was informed that the note was a notice for him to call at his office between 3 and 4 P.M. of the following day. It is a pretty difficult matter to "stick" the regulation druggist.—*Medical and Surgical Register.*

OBITUARY.

DR FERGUSSON OF PEEBLES.

ON February 15th, after a short illness, Dr Fergusson of Peebles died at his house on the Tweed, cut off in the very middle of a life full of work and usefulness.

Born at Girvan, in Ayrshire, in 1843, he was only in his 44th year. After being educated in his native town, he studied medicine in Glasgow, and in 1864 he took the license of the Faculty, and in 1865 became an L.R.C.P. Edin. After practising in Crosshill, and Ballantrae in Ayrshire for a few years, in 1870 he came as assistant and successor to the late Dr Crawford of Peebles, and soon after had to take full charge of the practice in consequence of Dr Crawford's illness.

He soon obtained a full share of the parochial and honorary appointments connected with the profession in Peebles and its neighbouring parishes. He became an F.R.C.S. Ed. in 1871, and M.D. Glasgow in 1876.

An energetic, cheerful, kind-hearted man, he obtained a large success in practice, was a universal favourite, and held nearly every office, social and municipal, which a country town can give. He was keenly alive to all improvements in medicine and surgery, and kept himself well abreast of progress. Active and cheerful, he had great powers of resisting fatigue, and till within the last two years was light and active, constantly able for all the heavy work of a country practice, and with cheerfulness and sympathy, which made him much beloved.

Within the last year or two work was evidently telling on him; he grew suddenly stout and heavy in his movements, and his friends noticed that his spirits were less buoyant. A long rest might have done him good, but he stuck to his work; yet, feeling necessity for help, only the day before his fatal illness began he signed a deed of partnership with Dr Gunn. His illness, in which he was devotedly attended by Dr Connel and Dr Gunn, was a very rapid attack of hepatitis, with probably diaphragmatic pleurisy, and ended fatally within a fortnight. His friends G. W. Balfour and Joseph Bell of Edinburgh saw him in consultation. Dr Fergusson was twice married, and has left a widow and eight children, the youngest of whom is only three months old.

His death turned the whole county into mourning, and his funeral, which was a public one, was very largely attended.

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Part First.

ORIGINAL COMMUNICATIONS.

I.—THE CLINICAL TEACHING OF MIDWIFERY AND THE DISEASES OF WOMEN.

By WILLIAM L. REID, M.D., Physician to the Glasgow Maternity Hospital; Physician to the Dispensary for Women, Western Infirmary, etc.

(*Read before the Edinburgh Obstetrical Society, 9th February* 1887.)

MR PRESIDENT AND GENTLEMEN,—I presume that all of us present to-night are more or less deeply interested in the teaching of Midwifery and the Diseases of Women, and that if our opinions were asked as to present methods of teaching, we should be disposed to say that they are not yet all we could wish them to be in either of these departments. Before entering on the consideration of these methods, let me say a word on what ought to be done by clinical as distinguished from so-called systematic teaching. Dr Edward Hamilton, late President of the Royal College of Surgeons, Ireland, in a recent address on education (*Brit. Med. Jour.*, 16th Feb. 1884), said that "the entire system of lectures demands sweeping and thorough reformation." He thinks that most *ex cathedrâ* teaching serves only to cram the head without the least effort at training the intellect, and that the days of systematic lecturing are drawing to a close. We are soon to have only the reading of good manuals at home, and practical work under good men in the hospital and laboratory. I think that the best course lies, as it so often does, somewhere between the two extremes. It seems to me that the lecture-room should be to the student what the drill-hall is to the young soldier; he should there learn his goose-step and how to manage the working parts of a rifle and gun. The hospital ward should be like the battlefield, where the same young soldier, under a general of tried ability, learns how to circumvent and subdue an enemy by the skilful use of the forces at his disposal.

Systematic lectures ought to teach the *what* and the *why*, clinical lectures the *when* and the *how*.

I propose to say a few words on the subject to be considered under each of the following heads:—1. The Past; 2. The Present;

3. The Ideal of Clinical Teaching; and what I say must be presumed to apply only, or at least chiefly, to work in Glasgow.

I. *The Past.*—Eight or nine years ago, any man who was a student of medicine—first, second, or third year, it did not matter which—could take his Clinical Midwifery in connexion with the hospital by simply paying his fee. He could attend his cases all through without ever having seen another confinement or knowing anything whatever about the matter. There is one prominent institution in Glasgow in which this is still the rule and practice. By-and-by the physicians began to give lectures twice a week, with the view of giving those students who cared to attend a general idea of the subject. In 1883 there was an attempt made to send out a more or less experienced nurse with each student at his first case or two, but this method did not meet with much favour, and things dropped back into their former course.

Let me tell you of my individual experience as a student, albeit now more than twenty years old. In my third summer I took a special lodging just beside the hospital, in order to secure a large number of cases. I had purchased and read carefully *Swayne's Aphorisms*, and had a profound conviction that in a large city every second case of labour ought to be one of placenta prævia, inversion of the uterus, or at least a cross-birth. Parturition was, I thought, a frightfully dark valley through which most women must needs pass. Till each of my first six or seven cases was over, I used to perspire almost as much as the suffering woman, and afterwards had a week or ten days of gloomy foreboding of puerperal fever. I had in this way some dozens of cases, and yet after my systematic course, which came a year or so later, I began my career as an accoucheur miserably ignorant of the practice of the art.

With regard to the past of gynæcological teaching there is little to be said. When I was a fourth year's student, a more than commonly astute physician at the Royal Infirmary discovered that one of his patients had an erosion of the cervix uteri. The news spread like a war alarm. The woman was taken into a side-room, covered all over with a sheet, except a small opening through which a speculum had been passed into the vagina. I, along with twenty or thirty other students, walked past, glanced into the speculum, and made way for the next observer. What were the patient's age, symptoms, and treatment we were not informed, then nor thereafter. This, while a student, constituted all my clinical teaching in the important and difficult subject of Gynæcology.

II. *The Present.*—Almost all our students take their Midwifery lectures in their fourth winter. During their second or third summer or autumn they take their Practical Midwifery. Some glance over Swayne, others do not. They trust to first seeing a case with a student who has already attended one or two. Each man is sent for to six cases, four of which, possibly being multiparæ, are over before or very soon after he reaches the house. In the other two he probably fails to find the os uteri, and has no notion of the presentation until the head rests on the perineum, and when the cases are over he feels thankful that none of the women or children died in his hands. He is then supplied with his certificate, and after sitting through a systematic course, and answering a few questions—for there is no clinical pass examination in this subject—he is launched on the world as an accoucheur. Do you wonder that this man for some years after feels small in the presence of the old women of the district in which he practises?

Of late years at the Glasgow Maternity Hospital we have been making what we believe to be changes for the better. Two years ago we appointed a second house-surgeon, whose chief duty it is to attend with the student at his three first cases, and give him clinical instruction in their management. The physicians also send for as many of the students on duty as possible when any operation is to be performed in the hospital. Two years ago, also, a rule was passed that each student must either have attended a theoretical course on Midwifery or the summer course at the hospital before being allowed to begin his outdoor cases. This rule I personally object to very strongly, on the ground that it prostitutes the lectures at the hospital. The students ought to go there to be taught, not the elements of theory, but how theory is to be reduced to practice, and this cannot be done so long as the short summer course of lectures is devoted to grinding them up in the elements of the theory.

Recently we made a great effort to induce the Directors of the Glasgow Maternity Hospital to rule it compulsory that students should have attended a qualifying course on Theoretical Midwifery before taking charge of hospital cases, but this was objected to by two of the medical men appointed to consider the matter, both of them teachers of Midwifery. They objected for two reasons,—firstly, that it would upset the class arrangements at the University; and, secondly, that students take a deeper interest in the theoretical lectures after having had practical work. I do not think either of these reasons valid, although I admit that they have a certain force. It seems to me that the matter is not one which can stand debate, and that it is unquestionable that a student, especially where, as in Practical Midwifery, he is left so much to his own resources, must get more good from the practice after he knows the theory, and that the women and children who pass through his hands must also then enjoy greater immunity from accident and disease.

All we were able to obtain was a rule that every student must pass a written examination on the management of normal and the diagnosis of abnormal labours before being sent to outdoor cases. This, at least, is a step in the right direction.

With regard to the Diseases of Women, the present method employed at the Western Infirmary by Professor Leishman is the giving of cases in the ward to senior students to report upon as to their history, and then permitting the students to examine the cases physically under his personal superintendence. Dr Stirton has no regular clinical class at the Royal Infirmary. As he very truly says: "Until clinical teaching is made part of the course, we cannot expect students to attend regularly, and yet how often do I hear medical men in practice bitterly lament the want of this special teaching."

The plan I follow at the Dispensary of the Western Infirmary is given further on in this paper. At the gynæcological section of a polyklinik of which I have charge, a more thorough method is adopted. I limit the class to three men, and charge a large fee. The graduate or student is presumed to have had sufficient instruction in theory, and begins by taking histories of cases. He is carefully taught diagnosis in connexion with the cases as they present themselves, and then allowed to perform all the minor operations under constant supervision. We have a superabundance of patients, and, after a three months' course of four hours a week, each individual carries away a fair knowledge of ordinary ailments and their treatment.

Here again, however, the difficulty in regard to previous theoretical instruction crops up. Students get what systematic teaching is given, at the fag end of the Midwifery course in the last year of the curriculum, or in the few summer weeks immediately preceding their final examination. They come to the ward or dispensary any time before this, because they cannot come during or after their systematic instruction. They see me, for instance, using instruments and appliances which they have never seen nor possibly even heard of, and the theory of which I, with many patients waiting, cannot stop to explain, and so they come and go, a little like the student with his six midwifery cases, really very ignorant of the whole matter. They gain, perhaps, as much knowledge as makes them venturesome in practice and dangerous to their patients. I am sorry to think that this is no exaggerated picture. In the old days of apprenticeship we had the same condition of things—practical before theoretical teaching—but with this important difference, that usually both master and apprentice had time to observe and talk over the case in hand together.

III. *The Ideal.*—I think we need hardly stop to discuss the question whether theoretical instruction should precede or follow clinical work. It seems to me utterly preposterous, and an evil calling loudly for redress, that we should have things as they are at present. But we may stop to point out how a better plan is possible. A student ought to take his systematic course on Midwifery during his third summer or winter, and his practical course during the succeeding summer or winter. His theoretical course on the Diseases of Women he should take in the third summer if he has taken his Midwifery in the winter, or in the winter if he has taken his Midwifery in the summer, and his practical work in the fourth winter or summer. The students I have taught have been recommended to take fifty lectures on Midwifery during the third summer, and fifty on Gynæcology during the fourth winter. This gives a full university course without undue haste, and without putting practice before theory.

Again, no student should be allowed to take Midwifery cases unless he can produce a certificate of having attended some sufficient course of theoretical instruction on the subject. He ought to call once or twice a day at the hospital during a fixed period, until he has watched six cases pass off in the labour-room under the care of the house-surgeon or head nurse. At this stage, also, he should practise palpation, learn to pass the catheter, and, with great precautions, be taught diagnosis by touch. He should then, along with another student, be sent to outdoor cases, each case being visited during or soon after labour by the outdoor surgeon. A dozen such he ought to attend, sending for the district physician when anything beyond ordinary is observed, and stringently bound down not to interfere himself except in emergencies. In the case of a more than ordinarily diligent student, say one who had attended over twenty cases, he might be allowed to apply the forceps in the presence of any of the physicians connected with the hospital. A clinical lecture should be given three times a week during the summer, or both summer and winter, and all the students should find it to their interest to attend. These lectures ought not to consist of an attempt to teach Theoretical Midwifery in five-and-twenty discourses, but ought to be purely clinical, and refer to the cases which the students are seeing along with the physician every forenoon in the wards. When the outdoor or the district physician is called to a case, he should attend the next clinical lecture, sending the lecturer a short note of the facts beforehand. The students who attended should be asked to give an account of the case from beginning to end, and the lecturer should ask questions at them or other members of the class, and make a running commentary. In cases of doubt as to fact, the physician who had consulted with the students would be then and there referred to. It is not difficult to see how useful this would be to all concerned, not excepting the lecturer himself. This plan is not original on my part; it is one I saw followed by Professor Schroeder, of Berlin, and with which I was very favourably impressed.

As to the clinical teaching of the Diseases of Women, the plan I have followed for some years at the Western Infirmary is this:—A dozen students are taken every three months, in the order in which they apply, those being preferred who have had previous theoretical instruction. They all hear every woman questioned, and a note of her history and symptoms taken down. If a local examination is necessary, four of them go with me into an adjoining room and see the patient examined and treated, while the others listen to the next history being taken by my assistant. After a few weeks each student takes his share in the examination and treatment, guided by me, and is asked to state what he finds wrong, and what he can suggest as treatment. A student who comes prepared by a previous theoretical course thus leaves with a fair notion of how to treat the ordinary diseases of women. But as I have already said, my great difficulty is that eight out of every twelve men come, and for that matter often go, pretty well ignorant of the whole subject, and that for the reason already indicated.

It seems to me that a plan such as this, so extended as to give every student an opportunity of joining in it, and followed by the same kind of instruction in connexion with the more severe forms of disease appropriate to the hospital ward, would be extremely useful to the student, and quite practicable for both student and teacher.

In conclusion, permit me to mention, in order to condemn as strongly as I can the notion which exists in various quarters, that a student ought not to be remitted at his pass examination because he is ignorant of the diseases of women. As you are all aware, some Boards demand only a three months' course on Midwifery and the Diseases of Women and Children. Can anything be more absurd than for a man to try to teach these subjects adequately in fifty lectures? The result naturally is that the examination following such teaching is a farce. One examiner told me lately that he would not object to my putting a question on Gynæcology on the examination paper, but would most decidedly object to my remitting a student because he could not answer it. We ought to have for these subjects a six months' course at least; teach them as thoroughly as possible, and demand a fair knowledge of them at our pass examination.

I have thus spoken of what I believe to be the great shortcomings of our present methods of clinical teaching, and have ventured to suggest something in the way of possible improvement. The importance attached to the reformation of such methods is exactly that attached to the conservation of human life; for the practice of these arts involves oftentimes not only the health and comfort of women and children, but the immediate loss or preservation of their lives. I trust that the discussion of the subject to-night may result in such a consensus of opinion as will greatly uphold the hands of those who are inclined to go forward with the work, and whose position gives them the opportunity of doing something actively in connexion with it.

II.—INTELLECTUAL EVOLUTION AND ITS RELATION TO PHYSIOLOGICAL DISSOLUTION.

By FREDERICK W. MOTT, M.D. (Lond)., M.R.C.P., Lecturer on Physiology, Charing Cross Hospital.

THERE is a tendency in modern thought, in its study and investigation of the process of evolution, to overlook the necessarily concomitant conditions of involution and dissolution. The three are inseparable. There can be no evolution or progress without, at the same time, dissolution or retrogression.

The object of this lecture is to show that the outcome of modern intellectual development in the production of great social changes is to produce a widespread physiological dissolution.

Before proceeding to show how this dissolution has occurred in previous conditions of civilisation, and the manner in which it is operating now, I shall endeavour briefly to describe the meaning I intend to convey by the term *Physiological Dissolution.*

Taking Herbert Spencer's definition of Life, that "it is the continuous adjustment of internal relations to external relations," as the most satisfactory one, we have to consider the individual as a physiological unit, and as a unit of the society to which he belongs. The properties of the aggregate are determined by the properties of the units, therefore the physiological condition of a society or nation will depend upon the condition of the individuals which combine to form it. In the equation of life of every individual the value of X must be a varying and ever unknown quantity, constantly changing, but determined by two sets of factors—freedom from hereditary tendency to disease, and a favourable medium in which to live and develop. I shall endeavour to show that both of these conditions may be depreciated by the effect of social evolution or modern intellectual development, and the value of X thus lowered.

This lowering of the vitality of the individual is what I mean, then, by physiological dissolution. I do not refer to total dissolution—that would be death—but to a partial and general process. If a sufficient number of a society or a nation be affected by this degenerative process, then not only does it indicate a partial dissolution of the units which make up that society, but a decay and degeneration of the race.[1]

Physiology, as at present taught, treats only of man as an animal, neglecting altogether his physiological condition as a member of a society and as an individual of a race. And I maintain that human physiology should be studied in a broader aspect, which would include psychology and sociology. Every practical physician knows the importance of observing man from a psychical point of view. Even in the common ailments of everyday life, what is a more frequent predisposing cause of dyspepsia, functional derangements of the liver, and of almost all diseases, with the exception of the specific disorders, than worry, anxiety, overwork? These may be, indeed, even the predisposing causes to contagion in some kinds of *specific* disease. Then the practical physician also knows that of more benefit than drugs is the release from mental strain, accompanied by change of social surroundings.

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[1] M. Sagneau, the well-known statistician, said at the Academy of Medicine of Paris, that among the educated classes one-fourth more are unfit for military service than among the masses; and in Prussia the proportion is still higher.

Again, a clear insight into diseases of the nervous system can, as Dr Hughlings Jackson insists, only be obtained by a knowledge of psychology.

What arguments are there to show that intellectual evolution must necessarily be attended by physiological dissolution?

1. *History repeats itself.*—Every civilisation that the world has yet seen has had its period of growth, arrest, and decay. Out of simple tribes great nations have been developed by a process of social evolution. Powerful empires, which have exerted an influence far and wide, have been founded intellectually and by the force of arms; yet hardly a vestige remains of their greatness except their history, written not only in books, but by hereditary transmission in those nations which have sprung up from their ashes.

India, Assyria, Persia, Egypt, all attained a high degree of intellectual development; but they have long since passed away, to give place to younger and more vigorous nations.

The Greeks, who excelled in literature, sculpture, architecture, poetry, the fine arts, and produced such men as Aristotle and Socrates, were semi-barbaric until after the conquests of Persia and India by Alexander the Great. Much of their high state of civilisation was a development of that which they had found in the East.

Modern philosophy is a development of that propounded by Aristotle two thousand years ago; and our own civilisation, in many respects, is not much ahead of that of the Greeks and Romans.

The Roman Empire also had its periods of growth, arrest, decline, and fall.

China is the solitary exception to this rule; but its growth has been very slowly evolved, and for the last three thousand years intellectual progress has been, as it were, petrified. Perhaps for this reason it is that dissolution has not yet set in.

The natural outcome of the progressive development of mankind is that each successive wave of civilisation hands on the torch of intellectual progress, the crest of each succeeding wave rising higher than the last. But can we be arrogant enough to suppose that the outcome of the present civilisation will be a universal brotherhood, in which all human beings will unite for the common weal? If not, *history* WILL *repeat itself*, and this present wave of civilisation will pass away, to give place to a new one, higher morally and intellectually.

2. *Division of Labour or Differentiation of Function*, the chief

factor of intellectual evolution and physiological dissolution.—In the earliest stages of the evolution of a race, physical strength plays the most important part in the struggle for existence, but ethnology shows that intellectual development soon exerts itself and overcomes simple physical strength. The men of the *Bronze Age* were of smaller stature, but, by finding out how to make sharper cutting instruments in bronze, were enabled to overcome the men of the previous *Flint Age.*

If you examine the skulls of these two races of men, you will notice, as compared with the men of the Bronze Age, that the men of the Flint Age had a low, receding forehead, therefore less development of the frontal portion of the brain, which is believed to be the seat of the higher centres of mind.

Later on, men discovered iron, and those who worked in this metal forged harder and sharper weapons than their predecessors, consequently the *Blood and Iron Age* has survived.

Probably at the present time we are just emerging from this age into the *Science Age*, and the nation is most powerful which boasts of the greatest commercial enterprise, industry, and potential force. An example of potential energy, to which England owes her great power in no small degree, is that which has been stored up by the sun countless ages ago in her coal-fields.

The evolution of a higher species from a lower is coexistent with, and determined by, morphological changes and differentiation of function, enabling the organism better to adapt itself to external conditions in the struggle for existence. A very similar process takes place in the evolution of a race, the differentiation of function being here termed Division of Labour.

The specialization which results from this process, while tending to improve the condition of the nation, is slowly but surely producing the factors of its dissolution by degeneration of the individual units.

One of the principal results of the division of labour is to enable large numbers of people to congregate into towns. And what effect has this upon the vitality of the race? It seems to make the rich richer and the poor poorer (for where the light is strong the shadows are darkest), and it cannot be said that it improves the physical and moral condition of the mass of the people, or even tends to the increased happiness of the many.

John Stuart Mill was probably right when he questioned whether all the mechanical inventions yet made had lightened the day's toil of any human being?

Lord Tennyson, in his "Locksley Hall: 60 years after," also asks, "Is there progress, or rather, is there not decline?" And he expresses a belief that there is a canker invading every part and function of life.

The riots which have lately occurred in certain of the overpopulous districts in Europe are but an expression of the terrible struggle for subsistence which is going on; and if we read the report as to the cause of the recent riots in the manufacturing districts of Belgium, we may well ask—Is not this *modern slavery* an outcome of intellectual progress, little better, if so good, as the serfdom which existed in England at the time of the Conquest?

We read of young girls of twelve obliged to work like animals, loading the trucks of coal, and at this age subjected to immorality; of a whole family working twelve to fourteen hours a day, and yet not making, all told, more than 28 frs. a week, scarcely seeing the light of day, tasting *horseflesh* once or twice a week, and clad in rags and filth. Has there ever been a slavery worse than this? And when the people rose and demanded an amelioration of their hard lot, they were shot down by the military.

Now if we turn to our large towns and manufacturing districts, what do we see? Miles upon miles of streets composed of houses, each one the counterpart of the other, with its dirty backyard, its foul drains, dark, filthy rooms in which whole families are huddled, soaked in an atmosphere of squalor and corruption. If you desire a more vivid picture of the moral and social degradation and bodily corruption and dissolution, such as one could hardly believe to exist in the 19th century, turn to the "Bitter Cry of Outcast London" (an inquiry into the condition of the abject poor by the London City Mission), and to "Squalid Liverpool." It will be found that hundreds of thousands of people are born and live in conditions in which infancy knows no innocence; youth neither modesty nor shame; maturity arrives which is mature in nothing but suffering and guilt, and a blasted old age which is a scandal on the name we bear.

Comparing the poor of our cities with equally poor people of the country districts, we find a great contrast in their moral and physical condition. The Highland crofters, for example, are the poorest of the poor, and yet a stronger or more vigorous race of men is not to be found.

3. *Effect of unequal Distribution of Wealth by unequal Distribution of Nutriment.*—The rich eat more than they can properly assimilate—the result being, at first, functional, and then organic changes in their organs. The liver is, after a time, unable to perform its proper physiological function; the imperfectly oxidized nitrogenous waste products accumulate in the blood, producing gout in its many aspects, and affecting secondarily the bloodvessels, kidneys, heart, and brain; and eventually a physiological dissolution takes place, ending in death. The poor, on the contrary, not obtaining sufficient nutriment, suffer from malnutrition, which makes them more predisposed to be affected by all those causes (whether hereditary or otherwise) which lead to physiological dissolution.

4. *Artificial Selection replacing Natural Selection.*—Some forms of artificial selection, no doubt, are of the greatest benefit in the evolution of a race. Let us take, for example, our ancient Norse ancestors, to whom Englishmen by hereditary transmission owe

their adventurous spirit, their love of freedom, law of obedience, ruling power, and success of colonization. The last mentioned is in no small measure due to the fact that the English, like the old Norse, will not marry or mix with degenerate types.

Part of the religion of "the hardy Norseman" led to a process of artificial selection, but the outcome of it was *truly* a "survival of the fittest." They believed that, in order to go to Walhalla, they must die a violent death, in battle if possible; but when too infirm or injured to wield their battle-axe and accompany their Viking, they threw themselves from the mighty cliffs of their country, saying, "I go to Walhalla." Compare this mode of selection with our modern military system, where the strong are sent to the wars to be killed, while the weak and infirm are left to reproduce their species.

A cause of artificial selection which is tending towards dissolution is *modern sexual selection*. If we compare the type of female beauty of the present day with the Grecian Venus of Milo, we shall notice a striking contrast in the form. To-day a waist of 18 inches (at least 6 inches less than natural in a woman of average size) is considered a personal attraction. It is only too obvious that this is an acquired deformity which produces injurious effects upon the woman and her offspring.

Now let us take the typical chlorotic town girl, who is either employed in business or is working hard at school during the most critical period of her life. She appears flat-chested, anæmic, generally suffering from some uterine complaint, and, when married, is often sterile through the imperfect development of her reproductive organs.

Again, another type: a highly intellectual, vivacious, beautiful girl, with pink and waxen complexion, dark lustrous eyes, long eyelashes, small bones—the tuberculous type, "a frail flower, soon blown, soon blasted." These three types, then, represent more or less the girls who get married.

In its widest sense the reproductive power of woman is the capability of giving birth to a well-developed infant, and to supply that infant with the natural food for the natural period. In a process of natural selection, as contrasted with artificial selection, none of these degenerate types would be capable of reproductive power as defined above. Were their fertility measured, not by the number of children they could bring forth, but by the number they could rear without the artificial aid of feeding-bottles and wet nurses, they would prove relatively sterile, and therefore any great number of degenerate beings could not possibly survive. The reverse is the case at the present day, for it is the exception in our town populations to find the mother fully suckling her child.

Again, owing to the modern custom of parents expecting their daughters to marry men with the same income which they have themselves acquired, our young and vigorous men are prevented from engaging in matrimony, and this tends to the spread of contagious diseases, notably syphilis, which is a factor in the degeneration of the race almost as potent as tuberculosis.

Unfortunately, hereditary wealth in matrimony is considered of more importance than hereditary health.

5. *Medical Science, by preserving degenerate types*, must add greatly to the process of dissolution; for, although still little able to cure disease, it possesses the art of prolonging life during lingering chronic diseases.

In this way numbers of people who would otherwise have died live to produce children with a strong hereditary taint. Especially do we see this illustrated in such diseases as *tuberculosis, syphilis, scrofula, cancer, nervous diseases and insanity, gout, diabetes, skin diseases, rheumatism, and congenital deformities.*

Hereditary transmission plays a far more important part in disease than is generally admitted. Of all forms of consumption or of nervous disease (insanity or otherwise) the most severe are those in which the hereditary transmission is most definitely traceable.

6. *Education.*—Our modern system of education, while having done much for the intellectual progress of the race, is not altogether free from the charge of having produced mental and bodily degeneration. The unfortunate system of payment by results, by which numbers of children in the Board schools are crammed in order to raise them to a certain standard, produces disastrous effects upon the health, more especially of the half-starved children who are seized by the School Board officer, but who never seem to have been reached by the hand of the officer of health. We might just as well place a heavy weight in the middle of the schoolroom, and make each of the children try to lift it; some would find the task light enough, others would be physically unable to perform it.

Moreover, the modern system of examination, as exemplified in the Indian Civil Service, has a tendency to destroy all originality of thought and purpose. Mr Herbert Spencer, in his *Study of Sociology*, alludes to this, remarking that Mr Froude himself said that he would have been unable to answer more than two of the twelve questions in the history paper! The endeavour of an examiner who is not at the same time the teacher appears to be to try to find out what a candidate does *not* know, instead of how much he knows.

7. *Overpressure in Business.*—There is not the slightest doubt that overstrain and worry in business or profession is one of the most fruitful causes of disease both of body and mind, producing at first functional derangements, attended by mal-assimilation, then mal-nutrition, and, finally, a tendency to physiological dissolution. Railway travelling, with the inevitable running to catch trains, will have its effect by producing sudden strain upon the heart and blood-vessels in physiologically imperfect organizations.

8. *Overcrowding and Deficient Light and Air.*—But probably the most fruitful cause of degeneration of the type, as exemplified in the inhabitants of our overgrown town populations, is that produced

by overcrowding, with its attendant conditions of insufficient air and light. This, associated with imperfect food, leads to a disease in children—*rickets*, which foreigners call the English disease. Deformities of every kind in connexion with the growth of the bones occur—such as stunted growth, imperfect development of the chest capacity, and, in the female, of the pelvic capacity.

In connexion with physiological dissolution these are very important factors, more particularly the latter two. Children with rickety chests are much more liable to die when affected with bronchial or pulmonary diseases. Women who have passed through a rickety childhood are especially liable to dangers at childbirth; nor does it end here, because their offspring is either injured or destroyed in the process of delivery.

Again, overcrowding is the principal cause of tuberculosis, a disease which, according to Koch, destroys one-seventh of the whole population. And it is, of all diseases, perhaps the most transmissible by heredity, but, unlike syphilis, it does not seem to interfere with the reproduction of the species—consequently any cause which tends to the increase of tuberculosis has a cumulative effect upon the race. The effect of increased breathing space in our barracks has been to diminish the mortality of phthisis among our soldiers to such an extent as to fully warrant the assumption that overcrowding *is* the most potent factor in the production of this disease.

9. *Alcoholism.*—By this term I do not mean merely the tendency to drunkenness of the present generation, but a congenital thirst handed down from ages past; and on this account I look upon it as a positive disease, which works its evil effects, more particularly upon the poor. Their destitution and misery has been ascribed to the increasing use of spirits; but I am rather of opinion that the use of spirits is not *the cause* so much as *the effect* of poverty. For it is not, as a rule, that the *well-fed* working man becomes a spirit-drinker, because, as Liebig truly says, "When the labourer earns by his work less than is required to provide the amount of food which is indispensable for his body, he resorts to drink. Spirits, by their action on the nerves, enable him to make up the deficient power *at the expense of the body*, and to drown his cares and miseries, to consume to-day that quantity which ought naturally to have been employed a day later. He draws, so to speak, a bill on his health, which must be always renewed, because for want of means he cannot take it up, he consumes his capital instead of his interest, and the inevitable result is the bankruptcy of his body—that is, physiological dissolution. One example only need be taken to show what vital degeneration of tissue alcohol produces—it is merely one out of hundreds which could be cited—and that is the difficulty in the healing of wounds.

10. *Influence of Syphilis.*—It has been said that *a man is as old as his arteries;* but we have seen that those causes which allow of the congregation of people in cities are at the same time indirectly

the causes of the widespread dissemination of syphilis—a disease which is the most potent factor in the production of *arterial degeneration.* With all its attendant effects on every organ of the body, particularly are the ravages of syphilis seen in people who are ill-nourished and the subjects of alcoholism. It is a fruitful cause of insanity, idiocy, congenital diseases, abortions, and diseases almost too numerous to mention. It principally operates, as I have said before, through its influence on the bloodvessels.

11. *Liability of Town Populations to Zymotic Disease.*—Many infectious diseases, notably smallpox, typhus, and plague, have disappeared, or are fast disappearing, from our midst, owing, in a great measure, to the sanitary improvements brought about by preventive medicine. But typhoid, scarlet fever, diphtheria, whooping-cough, and measles, are still among the most fruitful causes of mortality in our large towns.

12. *The Influence of Intellectual Evolution on Diseases of the Nervous System.*—I think there can be no doubt that, with increased function of mind, occurs the possibility of increased diversity of dissolution. Hence intellectual evolution must add to the neuropathological family. Moreover, the highest centres of the organ of mind, which are more especially developed in the highly intellectual, are "the last to come and the first to go"—that is, are more prone to physiological dissolution. But since nervous diseases are especially liable to hereditary transmission, the effect produced on the race will be a cumulative one.

A glance at the following classification, based upon our previous definition of "Life," will show how heredity combined with external causes will operate in the production of disease:—

CAUSES OF DISEASES.

I.
Internal or Hereditary.

Racial History.
Pedigree or Family History.

II.
External.

Relations of Individuals.

- Atmosphere.
- Climate.
- Temperature.
- Food—quantity, quality.
- Water.
- Habitation.
- Soil.

Relations of an Individual as a Social Unit.

- Poverty.
- Occupation.
- Overcrowding.
- Mental worry and anxiety etc.
- Alcoholism.

I have endeavoured to show that intellectual evolution, as represented by modern civilisation, will, by overcrowding, the unequal distribution of wealth, and social changes incidental to these two factors, lead to an increase of the tendencies to disease, therefore to physiological dissolution. But each of these internal and external causes of disease mutually react, and the complexity and diversity of the combinations are dependent upon the complexity and diversity of the social surroundings. It must not be thought that I wish in any way to decry intellectual progress. Such has not been my object: rather that of bringing before you the facts which tend to prove that a racial existence, like that of the units which make up the race, has a period of infancy, youth, maturity, old age, and decay; that the same factors which lead to early decay and dissolution in individual organisms also tend to the same result in the race. Every nation must have its period, then, of growth, arrest, and decay. Wise legislation, no doubt, can do much to stop the inevitable process of dissolution. So far our town populations have been saved from excessive degeneration by the continuous ingress or migration of the rural population; but in England agriculture is fast dying out, and the peasantry of this country are becoming far less numerous than the town populations. For example, the whole of Scotland does not contain so many people as the metropolis. Therefore this refreshing influence on the town population has almost reached its limit, and it seems to me that nothing but a grand scheme of state-aided colonization will serve to relieve the plethora of our over-crowded cities. An intellectual development must be paid for in the lives of future generations and in our racial existence; and it will not be the descendants of the powerful, the rich, the learned, or the intelligent which will constitute future humanity, but the descendants of the hard-working peasant.

Yet the process of racial evolution, with its concomitant dissolution, is so wide and complicated that in truth humanity is but moving, as the laureate says,—

> "Forward, backward, backward, forward,
> To the immeasurable sea,
> Swayed by vaster ebbs and flows
> That can be known to you and me."

III.—CASE OF DOUBLE HEPATIC ABSCESS.

By Allan C. Sym, M.D.

The following case of double hepatic abscess, successfully treated by operation, seems to me to be worth recording:—

J. M., æt. 50, married, enlisted in the Royal Engineers in 1863, and was sent out with his regiment to South Africa in 1865, being stationed there in British Caffraria for five years. Up to the time of going out he was perfectly healthy, but had had the ordinary diseases of childhood. He never had smallpox. In 1865, before going out to South Africa, he was twice vaccinated unsuccessfully. His work previous to going on foreign service consisted in pontooning, and he often got very wet; but this seemed to have no untoward effect on him. In 1869, after four years' service in Africa, he was seized with dysentery in King William's Town, and remained nine months in hospital. He was then sent home to Netley Hospital, where he remained six months, and after that he still continued to suffer to some extent for several years. He attributes the dysentery to drinking swamp-water while working in a quarry. They worked at some distance from a stream, and sometimes were so thirsty that they could not go to fetch good water, but had recourse to the stagnant water in the quarry. At this quarry he worked for three or four months, though not hard, as his duty consisted mostly in superintending the work of others. He drank beer occasionally, but never to excess; took no native beer or spirits, but took a little of the Cape wine.

Soon after his dismissal from Netley the patient removed to Edinburgh, where he was for some time under the professional charge of a medical man in town; but, though it is now seventeen years since he first was attacked, he cannot say that he is even yet free of dysentery. There is, however, now scarcely any hæmorrhage from the intestines. He has never had piles. His weight, when he embarked for foreign service, was twelve stones, and on his return was seven stones. His height, 5 feet 7½ inches. Before he took the dysentery he thinks, but of this he cannot be sure, that he had a little pain in his left side, and, even yet, continues to have a great deal. He had flushings of heat, but has no idea how often they came, having taken no count of them. He has now shiverings but no flushings, and has what he terms a "grewing" occasionally, for which he can assign no cause. After the flushings, which were more frequent in South Africa, and now after the "rigors," he perspires considerably. He complains of pain on the right side, this being the side on which he always lies; when he lies on the left side he has pain on both sides. The pain on the left side came on definitely after he came home to Netley Hospital. He has been a teetotaler for the last ten years; before that he was a moderate drinker. He suffers intensely from right-sided headache, and has a lightness of his head when stooping.

The "trouble" in his liver came on about November 1885, great pain going into his right shoulder and passing down his right arm. At this time he was working in a well for three or four weeks. On the 18th of January 1886, he suffered from intense pain, and, on going to the closet, he passed per rectum a large quantity of bloody matter, amounting in all to nearly a pailful, which looked to him as if it were all blood. He fancied it was another severe attack of dysentery which had come on, and took, as was his habit under such circumstances, about 30 or 40 grains of ipecacuanha powder. He found, however, that this could not be dysentery, for no loose condition of the bowels followed.

On 28th January Mrs M. called at my house and asked me to see her husband, and on my arrival the following was the condition:—The patient had a cachectic look—pale, slightly jaundiced, with an anxious expression, and he was perspiring slightly. The heart and lungs were normal. The spleen was enlarged, and projected from under the left costal margin, and was firm to the touch. A distinct swelling could be seen and felt in the right epigastric region, and on palpating this a distinct sense of bubbling and crackling was imparted to the hand, which disappeared in three days, when the liver was found to have decreased to the extent of three and a half inches. The liver measurement in the mammary line was 12 inches; also it (the liver) extended forwards to within one inch of the umbilicus. The left rectus muscle was very tense. Between the ninth and tenth ribs there was also a sense imparted to the fingers of deep-seated fluctuation made out, which by February 18th was quite distinct. The bowels were open, the motions being pale in colour. Urine, sp. gr. 1020, acid, and no albumen.

Having diagnosed the case as one of hepatic abscess, I requested Dr Felkin to see him, which he did, and agreed with me in the diagnosis. The temperature on this day was 103°. The patient was ordered to take 10-grain doses of quinine sulphate three or four times a day, and also at bedtime a pill containing euonymin and iridin. A few days afterwards Dr Felkin again saw .the patient with me, when we decided on operation on account of his high temperature, which had reappeared, and for his increasing weakness, pain, and discomfort. We therefore ordered blisters to be applied over the swelling at the ninth and tenth ribs, in order to set up inflammatory adhesion; and, on the 18th February, the temperature being still high, we proceeded to operate. The patient was put under the influence of chloroform, and the abdomen exposed and carefully examined. I then inserted a trochar between the ninth and tenth ribs, where the fluctuation was distinctly felt, and drew off somewhat less than an ounce of bloody fluid. As this fluid did not pass readily through the fine trochar used, I withdrew it with the intention of passing in a larger one, but failed to introduce this one, as I could not find the first opening and did not desire to make a second. I therefore desisted, and allowed the patient to come out of the chloroform. The fluid drawn off was taken charge of by Dr Barret, who was present, for the purposes of examination. He found numerous broken up liver cells mixed with blood, but nothing else could be made out.

The patient recovered very well; the temperature next morning was normal; and on the fifth day he was sitting up beside the fire, declaring that he was quite well, and taking his food heartily, and three weeks after the operation he declared that he had not since he left Africa felt so well.

Remarks.—I think that there can be little doubt that what happened on the 18th of January was the bursting of a large hepatic abscess into the intestine, most probably the duodenum, and that I tapped a second abscess. My reason for thinking so is, in conjunction with the pain previously and the general history, the presence of the crackling and bubbling already mentioned in the liver, thus indicating the presence of gas in a cavity. I would be inclined under similar circumstances when operating to incise the skin before inserting the trochar, so that I might more readily insert a trochar of larger calibre should it be necessary.

I would call attention in this case to the hemicrania, flushings, and slight perspirations, succeeded more recently by rigors and sweatings, and to the marked influence of quinine in the reduction of temperature, as indicating a malarial condition, though the patient never had an attack of ague. As a diagnostic symptom the condition of the recti muscles is very important, the rectus muscle being tense on the side on which the abscess is situated.

Many, in speaking of this operation, have dilated largely on the danger of allowing air to enter the cavity. In this case we find, however, that the first abscess burst into the intestine. From the intestine gas had undoubtedly escaped into the abscess cavity. If, as is said, the danger be so great from the introduction of air into an abscess cavity in the liver, how much greater must the danger be if, instead of air, we have the presence of gases from the intestinal canal. We found that within a few days of the bursting of the first abscess the presence of gas could no longer be detected, and no unfavourable symptoms arose leading us to imagine that the presence of the gas had done any harm. This case would lead me to suppose, therefore, that the danger is not so great from the introduction of air as has been imagined, and I would have little fear of this in operating on another case.

I might also, I think, draw attention to the gratifying results obtained so speedily after the removal of so small a quantity of fluid. The amount of fluid removed was not quite an ounce, and yet the liver was very much decreased in size. Another good result was the fall in temperature; for, while before the operation the temperature ranged about 103° to 105°, it fell to normal the day after.

The spleen, when I saw the patient on 20th September, reached from the eighth rib to the iliac crest, and forwards to the edge of the costal cartilages. The liver at that time in the mammary line was 6½ inches, and reached below the sternum barely 3 inches.

My thanks are due to Dr R. W. Felkin for his kind assistance in this case.

IV.—REMOVAL OF THE UTERINE APPENDAGES FOR DISEASE, WITH TWENTY-THREE CASES.

By SKENE KEITH, M.B., C.M., F.R.C.S.E., Assistant-Surgeon for Ovarian Diseases, Royal Infirmary, Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, 19th January 1887.)

(*Continued from page* 816.)

CASE VIII.—Mrs Y., age 35, had suffered from pain in the left ovarian region for twelve years, since the birth of her second child. At first the pain was not constant, but for years it has never left her. There is also pain in the right side, and for the last two years the worst pain has been in the back. For ten years the patient was almost constantly under medical treatment, and, after seeing a larger number of doctors than she can even remember the names of, and having been an in-patient in the Royal Infirmary on two occasions, she came to the conclusion that she was incurable. After an interval of two years, and on account of frequent attacks of vomiting being added to her troubles, she thought that she would make another attempt to gain relief; and now, after thirteen years of suffering, I think she is to be well. There was no difficulty in feeling the enlarged tubes through the abdominal wall, and from the vagina the exquisitely tender masses were easily made out. The operation was performed on the 6th October 1885, and was a most difficult one. The left tube and ovary were the more difficult to remove, and, unfortunately, I was unable to cut away the whole of the organ on that side—a morsel being left beyond the ligatures, which I did not dare to remove for fear of slipping of the loops of thread. The patient drove home, a distance of eight miles, at the end of three weeks; she was very happy, and had no pain. Two days after going home she had to go to bed with severe pain in the left side, and on the thirtieth day after the operation there was a profuse red discharge from the uterus. I examined, and found a hard mass on the left side extending up to the anterior superior iliac spine, evidently a hæmatocele. By the end of January she was feeling much better, and in a fortnight her husband came up to say that she was splendidly well, and that there was no pain. She kept fairly well till April, though menstruation recurred usually every three weeks. At this time vomiting began to be frequent, everything was bitter, and the tongue was large and indented by the teeth. In the beginning of August she was steadily improving; the periods were regular, there was less discharge, and little pain. This was the last good news, and in October I had to take her back into the hospital; the pain was as bad as it had been before the operation, and the vomiting and sickness were very much worse—indeed, she was sick after almost every meal. There was still a swelling on the left side of the uterus, and I suggested that an attempt should be made to remove the small piece of ovary which was known to be there. The patient and her husband at once consented, and after waiting nearly three weeks for a day when she was not sick, I cut down again, reached the mass on the left side, and after a great deal of difficulty was able to remove a tumour the size of a small hen's egg. This mass was universally adherent, and burst, part of the contents being old blood-clot. The case was drained, and there is only one faint cicatrix, barely two inches in length, to be seen on the abdomen. No sickness, pain, nor uterine discharge followed the operation, and the woman was kept on her back for five weeks. Four more weeks have now passed, and there has been no menstruation; "flushings" are troublesome, but otherwise the patient is very well, and takes her food better than she has done for years.

CASE IX.—Miss A. B., age 36, when 11 years of age fell off a hay-cart. This fall brought on her first menstrual discharge. She says that she screamed for five days with pain in the back. There was dysmenorrhœa for eight years; she was better for two; then had a baby, and for fifteen years has suffered from dysmenorrhœa, the pain coming on the third day before menstruation. On the day before the flow appeared the pain amounted to agony, and she often rolled on the floor. With the appearance of the flow the pain lessened, but she then suffered from frightful headaches, lasting a week. She constantly lived in dread of what each month was to bring. *7th October* 1885.—Right ovary cystic; left hard and fibrous; tubes dilated; pelvic adhesions. A few days ago the patient said that she was quite well.

CASE X.—Mrs M., age 29, complained of constant pain in the left side and back, of menorrhagia, and of a steady decrease in health and flesh. She dated her troubles to the birth of her last child seven years ago. Operation on 28th October 1885; no adhesions; ovaries large, tubes healthy. On the anniversary of her operation she called to say that she was quite well.

CASE XI.—Mrs G., age 26, had suffered from pain across the lower part of the abdomen for six years since the birth of her first child. The pain was at its worst for two days before menstruation. A second child was born four and a half years after the first, and since then she has been much worse, and has been unable to do her housework. She is very thin. The ovaries were felt to be enlarged, and the left was diagnosed to be adherent. This was found to be the case on 26th December 1885. Is now in the most perfect health.

CASE XII.—Mrs G., age 34, dates the commencement of her troubles to the birth of her second child eleven years ago. It is now four and a half years since her youngest was born, and for this length of time she has never known what it was to be free from pain, which is worst before and between the periods. She is wretchedly thin, and has had nine months of treatment, which she describes as "being burnt inside," and was none the better for it. Operation on 5th January 1886. There were no adhesions. After leaving hospital her convalescence was not hastened by being turned out of the house one night by her drunken brute of a husband. She is now working all day long charing; she has no pain, and is well.

Case XIII.—Mrs H., age 34, fell off a chair ten days after her last child was born five years ago. She was lifted into bed, and at the end of six weeks was removed to the Infirmary. While there, an abscess was opened in the left groin, and she was also "burnt inside." The pain, which she has now had for five years, is situated principally in the left side and back, and is worst before the periods. There is profuse leucorrhœa, and the menstrual flow has lessened in quantity. The operation on 25th January 1886 was complicated by adherent intestine preventing the passage of the fingers into the pelvis; the right ovary was cystic, the left small and cirrhotic, and both were adherent in the pelvis. Five weeks afterwards she looked fat and well, and although complaining of some of the old pain in the left side, had been able to paper one of her rooms unaided. Last week she wrote that she was happy to say that she had not the constant pain she had before, but still has a great deal at certain times.

Case XIV.—J. D., age 27, "racked" herself seven years ago while nursing her mother. The pain was first worst in her left side; now the right is the worst. The pain commences to increase eight days before menstruation, and lasts through it. This patient came to the hospital several times, and at last, though the case was not looked on as a favourable one, the operation was performed on the 5th February 1886. The left ovary was cystic, had split up the broad ligament, and was removed with great difficulty. The right ovary had become transformed into a cyst containing ℥vi. of clear yellow fluid, and was entirely enclosed in the broad ligament. The enucleation was very difficult, both on account of the thinness of the cyst wall and from the close adhesion, and it was not possible to say whether the whole organ had been removed or not. This was the only case of the series where I had to make an incision larger than would admit two fingers. The operation has been a complete failure, and the girl now menstruates oftener than she used to do.

Case XV.—Mrs T., age 28, never pregnant, for six years has suffered from pain in both groins, in the back, from leucorrhœa, and most especially from dyspareunia—the latter, with loss of strength and emaciation, being the most prominent symptoms. Three years ago she had gonorrhœa. The operation was on the 12th

February, and it was expected that pus would be found in the right tube. Instead of this the ovary was cystic, and contained ℥v. of fluid. There were adhesions, and the broad ligament was opened up. The left ovary was also adherent and enlarged, and the tubes were not healthy. In the beginning of June the patient returned from a visit to Ireland, and was then very well. In September she complained of pain in the left side; but had been travelling too much, and there was nothing to be felt. In the beginning of November there was a slight bloody discharge from the uterus; and on December 17th she again came into town, complaining of pain in the left side. A hæmatocele extending as high as the anterior iliac spine was then felt, and with rest the pain is abating.

Case XVI.—Mrs J., age 37, suffered from constant bearing down for twelve years since her first child was born; with the birth of each child the pains have become worse, and for four years she has had, in addition, pain in both groins. She had been an in-patient in the Glasgow Royal, Western, and Edinburgh Royal Infirmary, and had been discharged from each, no better. On examination, the uterus was found to be retroverted, due probably to a small fibroid on the fundus; the right ovary was enlarged and adherent, and the left tube was thought to be dilated, though this turned out to be the ovary elongated and cirrhotic. On the 6th March the left ovary and tube were removed as usual, and the broad ligament below the right was secured in a clamp, so as to prevent recurrence of the retroversion. In the beginning of November the patient started with her children to join her husband in India. This she had desired to do for some years, but had never felt well enough for the journey.

Case XVII.—Mrs D., age 34, suffered for eight years from pain in the back and left groin, and from leucorrhœa, and lately has been losing flesh. The uterus was large, cervix torn, and the right ovary was tender, adherent, and enlarged. As sewing up the cervix would have improved her general condition, and probably cured the pain in the back without relieving the ovarian pain, I removed the ovaries and fixed up the uterus, as in the preceding case, on 26th March. The tubes were distended by fluid. Local and general treatment had previously given temporary relief. On 13th August patient sailed for America with five children.

Case XVIII.—Mrs H., age 48, suffered from constant pain in the right side and from prolapse for eleven years. She feels life a burden, and has been unable to wear a pessary on account of the pain in the right side. As the right ovary and tube were felt to be enlarged and adherent, a similar operation to the two previous ones was performed on 23rd April 1886, and by August the patient was fit for anything, and continues well.

CASE XIX.—Mrs R., age 22, was delivered of her first and only child five years ago, and has not been well since. She has constant pains in both groins and across the front of the abdomen, worst usually while menstruating. Dsypareunia is also a prominent symptom. Her husband, a military gentleman, gave her syphilis shortly after marriage. She had been seen by two specialists on removal of the appendages, who were said to have diagnosed syphilitic disease of those parts, whatever that may mean. The appendages could be easily felt, and were exquisitely tender. They were removed on 27th April 1886. In September she was well and strong, but still had some pain in the left side, which had, however, disappeared in December.

CASE XX.—Miss C., age 28, has been ill for seven years with pain in the back and sides, and has seldom been out of the doctor's hands. Various kinds of pessaries have been tried, but could never be kept in, as they always caused pain at one particular spot behind the uterus. The uterus was large and retroverted, and behind it the right ovary, painful and tender, could easily be felt; the left ovary was also large, but appeared to be not adherent. On 27th May the condition was found to be as described, except that the left ovary was adherent. The uterus was fixed in the wound in the manner already described. When she went home, in seven weeks, she felt like a different being, and could hardly believe that she was free from pain. She is now well.

CASE XXI.—Mrs M., age 26, had constant pain in the back and sides for six years, increased menstruation, and had become much emaciated. As, in addition to retroversion of the uterus, there was enlargement of the ovaries and tubes, those organs were removed, and the uterus was fixed up with a clamp. In this case the veins in the broad ligament were enormous. In December 1886 she was very well.

CASE XXII.—Mrs C., age 34, for some years had suffered from menorrhagia, which was steadily becoming worse. In addition to this, there was constant pain in the ovarian regions. She said that she could have got along with one, but that the hæmorrhage and the pain were becoming too much for her. As general treatment, followed by curetting, give but very temporary relief, I removed slightly enlarged ovaries and tubes on 6th July 1886. The only particular point of interest about the operation is, that, owing to the thin and lax condition of the abdominal wall I was able, after separating pelvic adhesions, to draw the ovaries so far up as to sever their connexions by the cautery. This patient is now quite well.

CASE XXIII.—Mrs B., age 37; it was found to be impossible to liberate the appendages from adhesions, and the operation had to be abandoned.

Looking at the results of these twenty-three operations, and it is probable that those, in most of the cases, are the ultimate results, we find that eighteen, or seventy-eight per cent., have been cured, and that two, or nearly nine per cent., have received no benefit from the operation—one of these being what is now called an exploratory incision, that is, a failure or mistake in diagnosis. Of the three remaining cases, one has a hæmatocele, which did not form until seven or eight months after the operation, and there is no reason to suppose that the patient will not be quite well when this has disappeared. The second is improved, and the other is the most disappointing, though I believe that in time she will become quite well, and that, if she had been in better circumstances, her long illness would now be a thing of the past. Five were non-adherent, and twenty-one had received treatment previously for periods of time varying from nine months to twelve years—eight of those having been hospital in-patients.

A pregnancy or abortion was stated by sixteen to have been the cause of the disease, two ascribed it to an injury, and the others were unable to say more than that their illness had gradually come on. Four had never been pregnant, but one of those was married.

Menstruation has not appeared in any of the complete cases, though in Case I. there have been on four occasions a hæmorrhagic discharge from the uterus; and in Case XV. there was a slight red flow for a day or two at the time of the internal hæmorrhage. Before operation, the menstrual flow was increased in nine, diminished in four, and in ten there was no change.

Since the beginning of July of last year I have performed this operation four times—two of these having been previously hospital in-patients, one treated by an hospital obstetric physician, and the fourth had been sent from Orkney; and as I have not been so unfortunate as to lose a case, my operations have been justifiable on the first question, that of the mortality; the relief of pain and the improvement in the general condition have also justified most of the operations, and as yet I do not know of any drawbacks which have followed. The great difficulty is to know where to draw the line between operation and no operation; but I am certain of this, that, as long as the passing of a uterine sound is considered to be a part of an ordinary examination, so long will there be inflamed ovaries and Fallopian tubes to be removed.

A study of those and other cases has also shown me that some women at least get far too much local treatment, more especially of that kind which is commonly described by patients as being "burnt inside."

No.	Date.	Residence.	Age.	Adhesions.	Result.
1	1885. August	Hospital	28	None	Cured.
2	"	"	41	None	"
3	"	"	37	Pelvic	"
4	September	"	34	Pelvic and omental	"
5	"	Private	31	Pelvic	"
6	"	Hospital	35	Pelvic and omental	"
7	"	"	41	Pelvic	Little better.
8	October	"	35	Pelvic. Second operation, 19th Nov. 1886	Cured.
9	"	Private	36	Pelvic	"
10	"	Hospital	29	None	"
11	December	"	26	Pelvic	"
12	1886. January	"	34	Pelvic	"
13	"	"	34	Pelvic and omental	Improved.
14	February	"	27	Pelvic. Broad ligaments opened up	No better.
15	"	"	28	Pelvic. Broad ligaments opened up	Hæmatocele.
16	March	"	37	Pelvic	Cured.
17	"	"	34	Pelvic	"
18	April	"	48	Pelvic	"
19	"	"	22	Pelvic	"
20	May	"	28	Pelvic	"
21	June	"	26	Pelvic	"
22	July	"	34	Pelvic	"
23	May	"	38	Deeply imbedded. Not removed	No better.

V.—HOW CAN THE ACCOUCHEUR BEST GUARD THE PERINEUM WHILE THE FŒTAL HEAD IS PASSING?

By D. Berry Hart, M.D., F.R.C.P.E., Lecturer on Midwifery, Surgeons' Hall; Assistant Physician, Royal Maternity Hospital; Assistant Physician for Diseases of Women, Royal Infirmary, Edinburgh.

(*Read before the Obstetrical Society of Edinburgh, 9th February* 1887.)

I have no intention of considering the various methods of so-called support of the perineum. I purpose merely describing the plan I have taught for some years, as I find among many students and practitioners conflicting ideas of what is best done in an ordinary labour case. I take up, therefore, shortly—

1. *The relations of the uterus and its contents when the normally rotated fœtal head is beginning to distend the perineum.*
2. *A consideration of how the fœtal head should pass the perineum so as to leave a minimum of tear.*

3. *A description of how the medical attendant can best guard the perineum so as to avoid undue rupture.*

1. *The relations of the uterus and its contents when the normally rotated fœtal head is beginning to distend the perineum.*

At this period of the labour, the lower uterine segment, cervical canal, and pelvic floor have been canalized by the retracting uterus elongating and pushing the fœtal contents downwards. The whole fœtus is compressed and packed together, with the chin flexed on the sternum, and the occiput leading. The perineum or sacral segment is being driven back, its lower end elongated and thinned, and the vulvar cleft, chiefly in its lower part, *i.e.*, below the level of the vestibule, greatly distended. Uterine retraction sets up in the fœtus and retained liquor amnii a general-contents-pressure, which is distributed over that part of the skull periphery lying below the girdle of resistance. The diameters of the girdle of resistance will vary greatly, according to whether the occiput or sinciput dips. In the latter case the antero-posterior diameters will be increased, and the risk of tear augmented in like proportion. The demonstration of this belongs to elementary obstetrics.

In taking (2) *the consideration of how the fœtal head should pass the perineum so as to have a minimum of tear*, I have first to point out that the term extension of the head, as the fourth consecutive movement of the labour mechanism, is a most misleading one. It implies what I have already denied—that the chin leaves the sternum while passing the perineum; and that during the anterior fixation of the occiput under the pubic arch, antero-posterior and increasing diameters of the fœtal head form the antero-posterior diameters of the girdle of resistance. I deny *in toto* that the chin leaves the sternum, and I hold that this fixation of the occiput and descent of the sinciput is not the best or normal mechanism. The best mechanism to avoid tear is for the occiput to lead, for the head to be driven on by a steady movement of translation, any rotation on a bi-parietal axis so taking place as to favour occipital dipping and never dipping of the sinciput. It is easy to see how the erroneous idea of extension arose. The attendant, while the patient lay on her left side, watched the passage of the fœtal head from behind, saw more of the anterior portions of the head appear, and accounted for it by extension.

We now pass on to (3) *a description of how the medical attendant can best guard the perineum, so as to avoid undue tear.*

All the attendant can do, apart from the familiar means of relaxing perineal spasm by chloroform and hot applications, is to prevent the sinciput being forced down in advance of, or faster than the occiput. He restrains the fœtal head from passing too rapidly. He thus has always to get the occiput to lead, and to get it fully born first if possible. So far as I can judge, the best way of doing this is as follows:—

With the patient lying, of course, on her left side, the attendant places the thumb of his right hand, guarded by a napkin soaked in hot sublimate, in front of the anus and presses it gently there. The pressure is not in the direction of a line joining his thumb and the pubic arch, but nearly in that of the axis of the pelvic outlet. By this, descent of the sinciput is hindered, and that of the occiput favoured. When the latter is beginning to pass under the pubic arch, the fingers of the same hand are placed between it and the apex of the arch, so that when the occiput has cleared the arch the fingers are passed towards the nape of the neck, and the head thus grasped in the hand, the thumb lying over the sagittal suture. This gives one complete command over the head which is now engaging in the diameters between the nape of the neck and forehead and face, and allows the whole passage with as little tear as possible.

VI.—SECTIONAL ANATOMY OF LABOUR.

I. BEFORE LABOUR, AND II. FIRST STAGE.

By A. H. FREELAND BARBOUR, M.D., F.R.C.P.E., Lecturer on Midwifery and Diseases of Women in the School of Medicine, Edinburgh, etc.

(*Read before the Edinburgh Obstetrical Society*, 10*th November* 1886 *and* 12*th January* 1887.)

INTRODUCTION.

WM. HUNTER, in his classical work on the gravid uterus (published in 1774), laid the foundation of our knowledge of its anatomy. As we turn over the plates in his atlas, masterpieces of careful dissection and accurate drawing, or read his terse and lucid account of the uterus, its contents and membranes, we are at a loss whether to admire more his patient labour in accumulating a wealth of material such as no other has done before or since, or the painstaking care with which it has been examined and described. His atlas contains dissections of pregnant uteri from every month of gestation, with cases of head presentation, breech presentation, placenta prævia, and retroversion of the gravid uterus. In the preface he says that there are two kinds of anatomical drawing—"One is the simple portrait, in which the object is represented exactly as it was seen; the other is a representation of the object under such circumstances as were not actually seen, but conceived in the imagination. . . . . That figure, which is a close representation of Nature, and which is finished from a view of one subject, will often be, unavoidably, somewhat indistinct or defective in some parts; the other being a picture of fancy, made up perhaps from a variety of studies after Nature, may exhibit in one view what could only be seen in several objects; and it admits of a better arrangement, of abridgment, and of greater precision. The one may have the elegance and harmony of the natural object, the other has commonly the hardness of a geometrical diagram; the one shows the object or gives perception, the other only describes or gives an idea of it. A very essential advantage of the first is, that as it represents what is actually seen, it carries the mark of truth, and becomes almost as infallible as the object itself." His work, he said, was to be "a faithful representation of what was actually seen," and as a proof of the persistency with which he has kept to his ideal is the fact that, while more recent anatomical work has by new methods added to, it has not overturned any of his results; and we find that many things which are now brought forward as new were first of all pointed out by him,—for example, the plasticity of the uterus by which it moulds itself on neighbouring parts, and the cleavage of the decidua into two layers of which one is left inside the post-partum uterus.

Dissection, aided by injection of vessels, was the only mode of anatomical inquiry known to Hunter. Since his time anatomy has made enormous strides through an entirely new method, that of making Sections.

Contrasting these two, Section and Dissection, we see that the object of the latter is to show completely any one given structure, *e.g.*, a muscle or nerve. In order to do this, how does it proceed? It removes the surface, thus obliterating the familiar landmarks. It successively displaces structure after structure inside, and completely isolates each of these to see it entire. The result of this necessarily is that, when the imagination strives to reproduce the whole, it is somewhat in the position of an eager and sanguine youth of scientific spirit who has too rashly ventured on the dissection of the nursery clock. On the other hand, how does the sectional anatomist set to work? He first fixes the whole (by freezing or other method) in its natural position, and then, without disturbing the surface or removing the landmarks, he lays bare the inside in any given plane, with the natural relations unaltered.

As we are here emphasizing the importance of Sectional Anatomy, we may seem to have contrasted the two methods to the disadvantage of Dissection. But this would be unjust. To know the separate parts accurately is just as important as to know the relation of the parts to one another: the two are, in fact, complementary the one to the other, and neither can be safely ignored nor neglected.

To see the special value of Sectional Anatomy let us glance for a moment at two applications of it. Suppose we wish to know accurately the topography of the pelvis. Taking any one plane of the body as a starting point, we make, say, a coronal section. This gives us the relations under a given line. We repeat parallel sections at short distances until the whole pelvis has been made practically transparent. This gives us the relation of the parts underneath to each other and to the surface landmarks. Nothing is left to the imagination. We see the pelvis through and through, and learn exactly its "Geography," as it were. The potentiality of this method is still better seen when we are studying a function involving progressive stages. Here the element of time comes into consideration; and, fixing our attention now on one given section, we have it repeated at intervals of time so short that we are able to pass from stage to stage of the process as we pass from page to page of a History.

Within the last fourteen years this method has been applied systematically to the study of Labour. Nine sections have been made with the special object in view of determining the exact anatomical relations for various periods. The series is as yet by no means complete: we are far from being able to read the history of labour without a break; but enough has been published to make it worth our while to review the results systematically.

The nine sections already made arrange themselves in groups as follows:—

1. Braune	*Before Labour;*
2. Waldeyer	
3. Barbour	*First Stage;*
4. Schroeder	
5. Braune	*Second Stage;*
6. Chiari	
7. Chiara	
8. Stratz	*After Delivery.*
9. Barbour	

No sections of cadavera from the Third Stage have been made, but sections of uteri from Porro's operation tell us some facts which throw light on it.

Technique.—Every one has adopted with very slight variations the same mode of making the sections. The cadaver is placed for a few days in a freezing mixture of pounded ice and salt, the layer being at least a foot thick all round; the proportion of ice and salt is about 2 to 1; and four days' freezing of the trunk requires, in a cool temperature, about a ton of ice. The box in which the mixture is placed has a perforated bottom to allow the water to escape freely. The mixture is thoroughly stirred up, at least thrice a day. By three days the body will be frozen through. Our sections were cut with an ordinary hand-saw of upright pitch, the preparation being fixed between flat boards in which slits had been made to guide the saw in the desired line of section. The surface of each section was washed, and a tracing taken on glass; this was transferred to paper, and the details filled in and then coloured *ad naturam.* While being drawn and coloured, the sections were kept imbedded in ice; and when the drawing was finished, each section was placed for a day or two in alcohol, and then mounted in glycerine jelly between plates of glass.

While such sections give us the nearest approximation to the actual relations during life, a *certain caution* must be observed in applying clinically the facts learned from them. In the *first place*, of course, the tissues are fixed not during life, but immediately post-mortem; and, in the *second place*, the condition found in any individual specimen may possibly be pathological. After death, too, the tissues lose their tone, and from the stoppage of the circulation become flaccid; so that the settling down effects of gravity in each particular posture are exaggerated. Still, with care, we can eliminate these sources of error; and it is possible to attach too much importance to them. Thus Schroeder sets down to post-mortem change the fact that anatomists make the uterus retroverted, while gynæcologists find it anteverted. This difference of view, however, cannot be ascribed to the cause mentioned; as sections are given by Pirogoff, Heitzman, and Fürst, all of which show the uterus anteverted: it really furnishes an illustration of how sectional anatomy supplements and corrects the teaching of dissection.

In studying these sections, that we may not be lost in a mass of detail, we shall arrange the chief facts under these heads:—1. Peritoneum and connective tissue; 2. Uterus, its shape, walls, and vessels; 3. Cervix; 4. Placenta and Membranes; 5. Fœtus; 6. Structures in Pelvic Floor.

BEFORE COMMENCEMENT OF LABOUR (Sections by *Braune* and *Waldeyer*).

I. Braune's *section of a multipara (?) who committed suicide by hanging, in the last month of pregnancy.*

II. Waldeyer's *section of a X.-para at full time, who died from hæmorrhage some hours after both her legs had been cut off by a locomotive.*

The peritoneum descends in front between the cervix and bladder, covering about the third of the latter in Braune's, but scarcely so much in Waldeyer's. In both cases it comes down below the posterior fornix (¼ in. and ¾ in. respectively).

The fundus is in both cases at the level of the cartilage between the first and second lumbar vertebræ. The os externum is in Braune's at level of lower, and in Waldeyer's at level of upper margin of symphysis. The posterior wall is of uniform thickness throughout (6 mm. in Braune's, 5 mm. in Waldeyer's); the anterior becomes, in both cases, thinner in its lower third (4 mm. and 3 mm. respectively). In Braune's there is a remarkable thickening in the middle third of the anterior wall (to 10 mm.); unfortunately, he does not say whether the placenta (described by him as situated low down on the right side) is attached near this. In both cases large sinuses are divided all through the substance of the walls. Braune figures no sinus marking the os internum; Waldeyer shows one in the posterior wall, and says that there are several sinuses at the os internum.

The cervix is unfortunately not divided in Braune's section. In Waldeyer's it is divided mesially, and shows the membranes crossing it at the os internum, but not bulging into the canal, which is filled with mucus. The canal measures 1·44 in. (3·8 cm.) in length, and its walls become thicker as we pass downwards, due to the increased thickness of the mucous membrane. Microscopic examination showed that the glandular tissue of the cervix stopped where the canal ended, and this part therefore represents the os internum.

In Braune's section the placenta is not cut through. In Waldeyer's it is attached over the fundus; but, as it consists of two lobes, we do not estimate the proportion of its area to that of the uterus. The membranes line the interior of the uterus, but do not bulge into the cervical canal. In Braune's, the canal is described as only admitting the sound with difficulty; in Waldeyer's, as filled with mucus.

The two sections give us valuable representations of the attitude of the fœtus in head and breech presentation, but we delay considering this till we can also speak of those in the first stage.

The relations of the structures in the pelvic floor have been fully described from Braune's section by Dr Hart; and Waldeyer's section confirms the various points he has drawn attention to in his valuable communications. The pubic and sacral segments are in apposition; the vagina appears as a slit in the pelvic floor. Braune's 3·4 in. (8½ cm.) long; in Waldeyer's not measured, as the external genitals were destroyed. The bladder is wholly in the pelvis.

So much for the sections representing the condition before the commencement of labour. Before taking up those made in the first stage, we must consider the much-vexed question of what is cervix and what is lower uterine segment before labour begins.

We shall be constantly using such terms as "cervix" and "os internum," as to whose application opinions differ, and which accordingly need preliminary definition.

Cervix and Lower Uterine Segment.

There are few subjects in obstetrics round which more discussion has raged than the cervix in pregnancy and labour. During the fifty years after Stoltz (1826) first attacked the generally accepted view that the cervix was in part taken up to form a cavity for the growing ovum, the phase of the discussion was whether the cervical canal became shorter during pregnancy. This was a point which could be settled clinically, and the investigations of Duncan, Müller, and Martin have shown that there is a canal of pretty constant length during the whole of pregnancy.[1] We shall see also that recent anatomical investigation confirms this conclusion.

The discussion entered a new phase when Bandl's paper on Rupture of the Uterus drew attention to the peculiarity of that portion of the uterus which we now speak of as "the lower uterine segment," that it tends to thin in obstructed labour, and becomes marked off from the contracting and thicker wall above (the junction between them being now known as Bandl's ring). This lower segment he held to be *cervical* in origin.

The question, therefore, which we have to answer here is not so much "Whether there is a shorter canal at the end than at the beginning of pregnancy?" as "What is the structure and origin of the lower uterine segment?" I am at present examining several uteri as to the structure of this segment, and I hope to lay the results before the Society at its next meeting.

I have also collected from the literature all the recently described uteri which throw light upon this question; but have not gone further back than the last ten years, as it is only since the appearance of Bandl's paper in 1876 that attention has been directed specially to "lower segment." The specimens have been described in papers by Bandl,[2] Lusk,[3] Macdonald,[4] Küstner,[5] Marchand,[6] Langhans and Müller,[7] Sänger,[8] Bayer,[9] Hofmeier,[10] and Leopold;[11] there are also the frozen sections of Braune and Waldeyer already referred to.

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[1] In his paper "On the Cervix Uteri in Pregnancy," in the *Edinburgh Medical Journal* for March 1859, Matthews Duncan, from an examination of five uteri, arrives at these conclusions as to the cervical canal:—(1.) The length of the cavity of the cervix undergoes little or no change during pregnancy; and (2.) The capacity of the cervical cavity becomes gradually greater as pregnancy advances, and this is effected by an increase of its diameters or breadth, advancing from below upwards, that is from the external to the internal os of the cervix.

[2] *Ueber das Verhalten des Uterus und Cervix in der Schwangerschaft und während der Geburt*: Stuttgart, Enke, 1876.

[3] "A Note on the Ring of Bandl:" *Transactions of the American Gynæcological Society*, 1884, p. 291.

[4] "On the condition of the Cervix Uteri in the Latter Months of Utero-gestation:" *Transactions of the Edinburgh Obstetrical Society*, 1876–77, p. 330.

[5] "Beitrag zur Anatomie der Cervix Uteri während der Schwangerschaft und des Wochenbettes:" *Archiv f. Gyn.*, Bd. xii. S. 383.

[6] "Noch einmal das Verhalten der Cervix Uteri in der Schwangerschaft:" *Archiv f. Gyn.*, Bd. xv. S. 169.

[7] "Weiterer anatomischer Beitrag zur Frage vom Verhalten der Cervix während der Schwangerschaft:" *Archiv f. Gyn.*, Bd. xiv. S. 184.

[8] "Zum anatomischen Beweise für die Erhaltung der Cervix in der Schwangerschaft:" *Archiv f. Gyn.*, Bd. xiv. S. 389.

[9] "Morphologie der Gebärmutter:" *Gynäkologische Klinik, Strassburg*, Trübner, 1885. Also "Der Cervix und seine Stricturen," in the same Klinik.

[10] "Das untere Uterinsegment in anatomischer und physiologischer Beziehung:" *Schroeder's schwangere und kreissende Uterus*, Bonn, Cohen & Sohn, 1886.

[11] "Studien ueber die Uterusschleimhaut während Menstruation, Schwangerschaft, und Wochenbett:" *Archiv f. Gyn.*, Bd. xi. S. 443.

FACTS NOTED WITH REGARD TO CERVICAL CANAL AND LOWER SEGMENT IN UTERI

				above upper end of segment.	*			
9th.	Bandl.	2 cm.		About 2 cm.	Lower segment one-third of thick the cervix.	†	†	a
10th.	Lusk.	4½ cm.	Wall hypertrophied and canal containing mucous plug.	—	Walls thinner than those of rest of body; but no appreciable difference in mucous membrane or muscular structure.	—	—	Membranes adhere closely to lower segment and borders of internal orifice.
10th.	Lusk.	4·5 cm.	*Ibid.*	—	*Ibid.*	—	—	*Ibid.*
10th.	Lusk.	4·5 cm.	*Ibid.*	—	*Ibid.*	—	—	*Ibid.*
10th.	Waldeyer.	8·8 cm.	Walls 1·8 cm. thick above, and 1 cm. below. Mucous membrane thickens from above downwards.	—	Slightly thinner above end of canal.	Large vein opposite upper end of canal, posteriorly.	—	Crosses upper end of canal.
10th.	Macdonald.	8·75 cm.	Walls 1·09 cm. thick.	—	No Bandl's ring.	—	—	Down to very edge of end of canal.
10th (?)	Müller.	4 37 cm.	Canal calibre of pencil.	—	Anterior wall bulges some distance above end of canal.	Vein section.	Covered with spongy layer.	—
Full Time.	Leopold.[1]	4·75 cm.	Canal undilated.	—	—	—	Decidua flattened, and passing abruptly into cervical mucous membrane at upper end of canal.	Close over os internum.

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[1] Leopold also describes uteri from other months of gestation, and finds the length of the cervical canal for 4th month (two uteri) 4·5 cm., for 5th month (two uteri) 4 cm., for the 6th and 7th months (three uteri) 5 cm., and from the 8th month (two uteri) 4·5 cm.; in every case, he describes the cervical mucous membrane as passing abruptly into decidua at the upper end of the canal.

The results of these observers appear at first sight as tangled and inextricable as the muscular fibres which they were examining, but a careful study of their papers shows that this is often due to the mixing together of fact and theory. After picking out the facts and arranging them systematically, we find that there is more agreement than appears at first sight. Much confusion is avoided by our keeping in mind these three points:—

1. That the question of the structure of the lower uterine segment is quite distinct from that of its origin.

2. That one or two preparations are not enough on which to base a generalized description of the uterus at a given month of gestation.

3. That we are not justified in asserting that because uterus A at the fourth month shows one structural condition, while uterus B at the fifth month shows another, therefore it is generally true that the uterus passes from condition A to condition B between the fourth and fifth month. Such a conclusion assumes that at the fourth month uterus B was in identically the same structural condition as uterus A now is—a purely gratuitous assumption.

With these three points in view, I brought together all the uteri that have been described in the above-mentioned papers. For convenience the facts noted are thrown into a table, and arranged according to month of gestation. In the table I give only the pregnant uteri, and only those from the fourth month onwards, as those before this period do not bear on the point at issue. In addition to being described, many of these preparations have been figured, but, unfortunately, the drawings given are often of little value. "Schematisch dargestellt" is a favourite formula, which means that the drawing represents not what *is*, but what the observer *would like other people to see*, in his preparation. Very few set before themselves Hunter's ideal of anatomical drawing,—"A simple portrait representing the object as it is actually seen," which "carries the mark of truth, and becomes almost as infallible as the object itself."

In the table and in this paper we avoid, as far as possible, using the terms cervix and os internum, as their use prejudges the case and forestalls the verdict as to the origin of the segment before the evidence has been heard. We shall simply speak of "the walls of the canal" and "its upper end."

The second and third columns of our table show that we have *a canal of pretty constant length*[1] lined by the characteristic mucous membrane. Its walls are thicker than those of the non-pregnant cervix; and, in the later months at any rate, it contrasts sharply in

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[1] The average length is,—for the 4th month (4 uteri) 4·5 cm., for the 5th month (3 uteri) 4·3 cm., for the 6th month (5 uteri) 4 cm., for the 7th month (4 uteri) 4·3 cm., for the 8th month (3 uteri) 4·5 cm., for the 9th month (4 uteri) 3·5 cm., for the 10th month (12 uteri) 3·6 cm. That for the 4th and 5th is the same as for the 7th and 8th months, and there is a slight diminution for the 9th and 10th.

its texture with the wall of the uterine cavity immediately above it. Both Bayer and Hofmeier draw attention to the fact that, while the wall of the lower segment of the uterus can be split up easily into separate muscular plates, the wall of the canal has a felted texture which cannot be separated into layers, except at its external portion, where they both find the muscular fibre of the lower segment prolonged into it.

(To be continued.)

VII.—THE ETIOLOGY AND PATHOLOGY OF HYDRAMNIOS, WITH ITS RELATION TO CERTAIN FŒTAL DEFORMITIES.

By JOHN PHILLIPS, B.A., M.B. (Cantab.,) M R.C.P., Physician to the British Lying-In Hospital.

(*Continued from page* 811.)

HYDRAMNIOS cannot depend on a general dropsical diathesis in the mother, as many patients with dropsy at the time of delivery are not afflicted with it, and *vice versâ*. In twin pregnancies the dropsical effusion being confined to one ovum is a fact that plainly implies the cause is purely of a local origin. While one allows that the amniotic fluid may proceed from maternal sources, or, more likely, from the fœtus and its membranes, it is still very necessary to explain why in certain cases the liquid remains in normal proportions, whilst in others it is secreted in exaggerated quantity. Certain clinical facts bearing on this question are worthy of note.

1. Hydramnios very frequently coincides with twin pregnancy.
2. Children born of pregnancies complicated by hydramnios often present some malformation.
3. A certain number of the parents and children show undoubted signs of syphilis.
4. It is much rarer in primiparæ, and increases in ratio with the number of children.
5. There are often certain anomalies of the cord and alterations in the placental tissue present.

With regard to the twin pregnancy, Oulmont[1] found 7 out of 14 cases of hydramnios, and one triplet; Dubuisset,[2] 15 out of 28; Sallinger,[3] 26 out of 80, one triple and one quadruple birth; and Liegener,[4] 2 out of 40; making a total of 50 out of 162. It will be thus seen the proportion is very large. Spiegelberg says that the first child born is affected in 9 out of 11 cases, but occasionally there is a reversal of this order, as in a case recently detailed

[1] *Revue med-chirurgicale*, 1849.

[2] Thèse, Paris, 1834.

[3] *Loc. cit.*

[4] *Ueber Hydramnios*, Berlin, 1869.

by Lichliter.[1] The coincidence may be produced by a variety of facts in twin pregnancy, *e.g.*, the exaggerated development of the uterus, the stretching of the membranes, the compression exercised by the fœtuses on each other, the arrangement of the placentæ, the number and arrangement of the membranes, absence or presence of communication between the two fœtal circulations, and the varieties of pressure to which the course of the blood is subjected.

In the mode of placental arrangement four varieties may present themselves:—

(α) A single placenta, chorion, and amnion, with fœtal communication between the two circulations.

(β) A single placenta and chorion, but two amniotic sacs, with communication almost constant between the two circulations.

(γ) Two isolated placentæ, united by a membranous bridge, with communication between the two circulations rare.

(δ) Two isolated placentæ, two chorions and amnions, but no communication.

As a result of the communication between the two fœtal circulations, the cardiac activity of one of the fœtuses produces a reaction against that of the other, and in consequence a stasis in the heart of the latter or more feeble one; hence the transudation into the other is found augmented. As Schatz, indeed, says, the infant who has the stronger heart produces a greater arterial pressure and secretes more urine, hence its amniotic fluid ought to be larger in quantity.

Burns first called attention to the supposed connexion of syphilis with this disease in 1839, and its value as a cause has been alluded to at greater or less length by nearly all writers on the subject. M'Clintock almost entirely ignores it, but Fournier[2] has recently again drawn the attention of the profession to it, and Dorland[3] avers on very good grounds that successive dropsies of the amnion are always specific.

Having thus briefly laid before my readers the various theories as to the causation of this disease, I propose to enter on to the second heading, viz.:—The relations which apparently exist between hydramnios and certain fœtal deformities.

(B.) In consequence of the laws already laid down (p. 809), it may be taken for granted that any physical condition (local or general) altering the blood pressure or interfering with the fœtal circulation will be a primary element in the production of hydramnios. Three conditions present themselves for our consideration:—(1.) Anomalies of the placenta and placental tissue; (2.) Anomalies of the cord proper; (3.) Fœtal malformations.

1. Under the first heading we may enumerate the following:—

(1.) *Phlebitis.*—There is a complete analogy between the functions of the umbilical vein and the branches of the vena portæ to the intestines. Phlebitis and thrombosis of the one produce hydramnios, of the other, ascites. In a case mentioned by Bar[1] there was phlebitis of the veins of origin of the umbilical vein, producing hydramnios. The veins were blocked, and the areas corresponding to them pale and anæmic—the membranes were œdematous.

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[1] *American Journ. Obstet.*, 1885, vol. xviii. p. 590.

[2] Leçons sur la syphilis etudiée plus particulièrement chez la femme.

[3] *Canada M. and S. Journ.*, 1863-4, xii. 201-8.

(2.) Cartilaginous degeneration.[2]

(3.) Fibromyomata of placenta.[3]

(4.) Placental atrophy[4] and hypertrophy.[5]

(5.) Adherent placenta.[6]

(6.) General placental œdema, said by Lange and M'Clintock to be almost invariably present in cases of hydramnios, more especially in the acute form.[7]

There seems to be no case on record in which waxy degeneration of the placenta has produced hydramnios.[8] Fehling and Gassner attempt to show by very elaborate experiments that there is a relation between the weight of the placenta and the quantity of the fluid, but their conclusions seem to be somewhat untrustworthy.

2. Anomalies of the cord proper. There seem to be several capable of producing stagnation or stasis in the venous circulation of the placenta.

(1.) Very attenuated cord. One the size of a crow-quill has been recorded (Rauch, quoted by Sallinger).

(2.) Very exaggerated torsion.[9] It is a well-known law in physics "that the resistance which exists in a canal against the flow of the fluid is proportional to the length of that canal." Hence extreme torsion of the cord must have an inhibitory action on the circulation. Schauta[10] has recorded three interesting cases of this kind. In the first, there were 380 turns of the cord on itself, while, at its insertion into the fœtus at the navel, the skin was drawn up so as to form another turn. In the second, twins occurred, the second child of which had 307 turns to its cord; while in the third the fœtus was mummified, and there were 58 turns. A case recently under my notice, and complicated by hydrocephalus, had 42 turns. Kehrer[11] reports a case of hydramnios in which the cord was twisted 21 times; he seems to be opposed to the idea that there is any necessary connexion between the two.

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[1] *L'hydramnios.* Thèse. 1881, p. 126. Paris.

[2] D'Outrepont, *Schmidt's Jahr.*, viii. 63.

[3] Hildebrandt, *Monat. für Geburt.*, xxxi., Hft. v. p. 346 (1868).

[4] Rauch, *Œsterrich. Wochenschrift*, 1845, No. 6.

[5] Huber, *Monat. für Geburt.*, xxxiii. p. 286 (1869). ("Künstliche Frühgeburt wegen Hydramnios.")

[6] Oliver, *Philadelphia Medical Times*, 1878, ix. pp. 104, 105.

[7] *Dublin Quarterly J. Med. Science*, 1880, vol. lxix. p. 534.

[8] Greene, *Amer. Journ. Obstet.*, vol. xiii. p. 279.

[9] Elsœsser, *Schmidt's Jahr.*, vii. p. 198.

[10] *Archiv für Gynak.*, 1881, Bd. xvii. p. 21.

[11] *Archiv für Gynak.*, Bd. xiii. p. 230.

(3.) Cystic degeneration of the cord (Battson[1]). I have recently, however, seen a case of a fœtus with an impermeable urethra, and enormously distended and hypertrophied bladder, causing considerable dystocia; in addition, there was a cystic condition of the cord, and yet there certainly was only an average amount of liquor amnii.

(4.) A very short cord is undoubtedly a cause of hydramnios (Rodger[2]).

(5.) Stenosis of the umbilical vein and arteries (Leopold[3] and Rigler[4]).

(6.) Varicosities of umbilical vein (Bar[5]).

(7.) Embolus of the umbilical arteries from fœtal endocarditis.

(8.) Thrombus of the umbilical vein.

(9.) Hernia of the umbilical cord might cause the physical conditions resulting in hydramnios.[6]

(10.) Insertio velamentosa of the cord (Hewitt[7] and Truzzi[8]).

Stenosis of the umbilical arteries may produce atheroma and subsequent thrombosis. Stenosis of the umbilical vein may result from chronic phlebitis, characterized pathologically by the growth in the intima of spindle-shaped and round cells, which later develop into new connective tissue. This process Mewis[9] refers to hereditary syphilis, and thinks it may extend into the muscular coat, and even into the adventitia; he has, moreover, found calcareous deposits in the cords of syphilitic fœtuses. Sallinger has tabulated a considerable number of cases, in which he attempts to establish a relation between the length of the cord and the amount of the fluid. Bar, however, conclusively shows that there is no such relation existent.

3. *Fœtal Malformations.*—These may be divided conveniently into groups, according to the organs affected.

(1.) *Hepatic.*—Syphilis appears to be the chief disorder of the liver, producing circulatory changes. Wronka[10] shows this very well, where, in three cases, the first was cancer of the biliary ducts; the second, general inflammation of the same structures, and in neither of which was there hydramnios; but in the third, which was undoubtedly syphilitic, it was present, in consequence, apparently, of the vessels being obliterated by the gummatous tissue.

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[1] *Philadelphia Med. and Surg. Reporter*, 1870, xxiii.
[2] *Canada M. and S. Journal*, Montreal, 1880–81, ix. 193–199.
[3] *Archiv für Gynak.*, Bd. viii. p. 221.
[4] *Monat. für Geburt.*, 1867, xxx. i. p. 5.
[5] *Loc. cit.*
[6] *Lancet*, Oct. 23, 1886.
[7] *Obstetrical Trans.*, vol. xi. p. 40.
[8] *Gazz. Med. Ital. Lomb.*, Milan, 1883, viii., s. v. p. 467.
[9] *Zeitschrift f. Geburt u. Gynak.*, 1879, Bd. iv. Hft. 1, p. 62.
[10] Thesis. Breslau, 1872.

Bar has reported three similar cases of syphilitic hepatitis producing hydramnios. By a glance at any fœtal circulation it will be easily seen how any hepatic vascular obstruction must necessarily produce a similar condition of the umbilical vein.

Kuestner[1] describes two cases of twin pregnancy with hydramnios. In the first, the large fœtus showed cardiac hypertrophy of both ventricles with hepatic atrophic cirrhosis and ascites. The smaller fœtus simply showed signs of asphyxia. His deductions from this case were, that the hepatic disease was primary, and as a result the venous and portal circulations were interfered with. The portal vein, entering as a factor into both the fœtal and placental circulation, stasis in both these systems was induced. To overcome this, the fœtal cardiac hypertrophy followed, and, when this ceased to be efficient, transudation from the portal system occurred, whence the fœtal ascites and the extra fœtal hydramnios. In the second case, the first fœtus (from the hydramniotic sac) had the liver enormously enlarged from hypertrophic cirrhosis. There was slight ascites, but the umbilical arteries were widely dilated. Distention of the vessels and perivascular spaces of the liver was noted, and, in addition, pulmonary atelectasis and cardiac hypertrophy of both ventricles, as in the first case. In both conditions of liver the effect is the same, viz., a stasis of blood in the venous channels lying between the liver and placenta. From the high percentage of urea in the liquor amnii of the second case (·07 per cent.), Kuestner concludes that an abnormally large amount of urine was passed by the fœtus, owing to the increased action of the hypertrophied heart. He also mentions three other cases, in which the liver was small and cirrhotic.

(2.) *Cardiac hypertrophy* of intrauterine life need not be further alluded to; in addition to this process, however, we have—

(*a.*) Tricuspid incompetence. This produces a regurgitation into the right auricle, and engorgement of all the venous system behind it.

(*b.*) Pulmonary stenosis and insufficiency will be productive of hypertrophy and dilatation of the right heart, followed later by tricuspid incompetence, hepatic engorgement, and hydramnios.

(*c.*) Pathological conditions of the ductus arteriosus. Nieberding[2] has quite recently described two cases. The first was one of twins at the sixth month. The first child was contained in the hydramniotic sac, and was much the larger. Considerable effusion had taken place into its cavities, and general anasarca existed. The placenta was single, and the part nourishing the larger fœtus was correspondingly increased in size, and very œdematous. Nieberding believed this condition due to the circulatory condition of the fœtus. Considerable cardiac and renal hypertrophy was discovered, the former chiefly on the left side. There was also dilatation of the renal pelves, ureters, and bladder, while the glomeruli were filled with red and white blood corpuscles. This appeared entirely due to the premature closure of the ductus arteriosus, produced by a proliferation of the muscular coat and the intima.

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[1] *Archiv für Gynak.*, Bd. x. p. 134, and Bd. xxi. pp. 1-28. "Zur Kenntniss des Hydramnion."

[2] *Allgemeine Wiener Medizinische Zeitung*, 1884, xxix. p. 113. "Zur Genese des Hydramnion."

In the second case, a single fœtation, labour was induced at the sixth month, and the child was still-born. The bladder was distended with urine and reached up to the umbilicus—the urethra, however, was permeable. There was a renal condition similar to the first case. Left-sided cardiac hypertrophy existed, with considerable blood-cell infiltration into the lung and liver tissue. The placenta was large, œdematous, and studded with cysts about the size of a hazel nut. The vasa propria of Jungbluth was well seen. The ductus arteriosus was found quite closed by a similar growth as in the first case, but undergoing degenerative change. He considered that the premature closing of this vessel in both cases was the primary anomaly on which the circulatory disturbances of the fœtus rested.

(3.) With regard to hydrocephalus; this is naturally of a more obscure origin, and yet seems to be one of the most common of fœtal malformations, causing the greatest obstetrical difficulties both in diagnosis and treatment. Now the cerebral vesicles are formed from epiblastic tissue, as is the amnion in the greater part, and the only theory I can form is that this tissue has undergone a diseased condition by sympathy, so to speak; that while the amnion is secreting (as we have allowed it might) a diseased secretion, so is the lining membrane of the cerebral vesicle producing a large amount of cerebral fluid.

Gummatous masses in the pulmonary tissue have been found in connexion with hydramnios, although they cannot be said to have direct influence on its etiology.

Bladder malformations have been already alluded to, as also has ascites, which occurs when any derangement of the portal circulation is in operation. Sudhoff[1] has published a rare case of sarcoma of the coccygeal gland complicating hydramnios.

As to the comparative frequency of hydramnios and fœtal malformations, Calderini[2] is of opinion that they are nearly equal, or, in other words, that in every case of hydramnios there is a probability of some fœtal deformity, and chiefly of the cerebro-spinal canal. This is a very sweeping statement, and is entirely refuted by Bar,[3] who carefully analyzed 550 cases, and in 489 of these the condition of the infant was noted. 217 of these were born alive, and, so far as could be ascertained, normally formed; there were twins forty-seven times, and triplets once. In thirty-seven cases only were there distinct malformations present. Of these sixteen were anencephalous monsters; ten, hydrocephalous. There were five with spina bifida. Encephalocele and omphalocele occurred each once. The proportion, therefore, was only 7·5 per cent. Since 1882 I have collected twenty-four cases of hydramnios, and of these fourteen children were malformed, or 58·3 per cent. nearly. This is obviously excessive, and I think the smaller estimate much more likely to be correct.

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[1] *Centralblatt für Gynak.*, 1885, ix. 248.

[2] *Archiv. de Tocologie*, 1882, p. 161 (quoted from *Annali di Ostet. Gynec. e Ped.*, 1882).

[3] *Archiv. de Tocologie*, 1882, p. 528.

I think, then, in conclusion, the following inferences may be drawn from the above stated facts:—

1. That each case of hydramnios may have several causes at work for its production, but that the majority tend to effect some change in the tension of the umbilical vein and its ramifications, or the umbilical arteries in a less degree.

2. That during the early part of pregnancy, the negative pressure described by Ahlfeld is a strong factor in the formation of the fluid, while later the intercellular lymphatics described by Winkler, and Jungbluth's vasa propria, take an important share.

3. That there is certainly renal action going on during the latter half of pregnancy, if not earlier, and during that time the amniotic fluid is augmented by the periodical addition of freshly secreted urine, or its analogue in the fœtal economy.

4. That syphilis, in influencing the condition of the fœtal organs, has a stronger action through them than through the placenta in the production of hydramnios.

5. That fœtal irregularities are much commoner than is supposed; such items as exaggerated torsion of the cord, thrombosis of the umbilical vein, cardiac changes, and the like, being especially liable to be overlooked.

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VIII.—THE CÆSAREAN SECTION.

By J. STUART NAIRNE, F.F.P. and S. Glasg., Vice-President Glasgow Obstetrical and Gynæcological Society, Surgeon to the Glasgow Samaritan Hospital for Women.

(*Read before the Glasgow Obstetrical and Gynæcological Society, 23rd February* 1887.)

MR PRESIDENT AND FELLOWS,—I shall make a thousand apologies before I begin, because I am afraid I shall need them all before I end; and, were it not that I rely on your indulgence to hear me patiently, as being privileged to bring before you for discussion a subject of transcendent importance—a subject which has not for many years been brought before any medical society of this city—I could not have the courage to stand before you to-night.

The whole question, indeed, has been quietly sleeping in these islands, and especially in this part of the island, since the year 1858. Here and there during that time a voice has been heard as if desirous of opening up the question; but authority, use and wont, and "other such frail supports," have patted the speaker down. But the question will not lie much longer; and notes of cases and valuable life histories, like the splendid sketch of Clement Godson on Porro's operation, are accumulating slowly but surely, and demand scientific consideration. Thirty years ago, and what a change since then! Except in this one operation, tabooed and not even to be hinted at.

Surely I am not doing wrong to invite the Fellows of this Society to a reconsideration of the whole question—Cæsarean Section *versus* Craniotomy or other child destroying operation. Had I consulted my own desires in this matter, I would still have hung back from obtruding any views of my own upon this Society, based as they are upon an experience considerably different from that recorded by some happy Fellows at recent meetings.

Since I began practice it has been my lot to have to deal with almost every kind of deformity of the female pelvis that would obstruct or prevent parturition. I have seen and treated a considerable number of cases of post-partum hæmorrhage. I have had cases of placenta prævia, of ruptured uterus, of ruptured perinæum, of puerperal convulsions, of cancer of the os, of everything almost that one could think of, as adding danger and difficulty to parturition.

Happy indeed is he, I have said to myself, who has passed through his thousands of cases with ease and honour. Providence must have been kind to him. For a hydrocephalic or an anencephalic monster is a fact, and you cannot get over a fact like that —it will make a difficulty for you whether you will or no; and a contracted pelvis is a fact, and a rachitic pelvis is a fact, and you cannot get over them or out of them, if they meet you, without a considerable deal of difficulty.

Ten years ago I did my first craniotomy. The patient was a poor woman in the East End, whom I had once attended when I was a student at the Glasgow University Lying-in Hospital, a place well known to one at least of the Fellows of this Society. On that occasion she had had a difficult, tedious labour. Delivery was effected by the feet. She had a generally small pelvis, with a prominent projection of the promontory of the sacrum. I could not condescend on measurements at this distance of time. She had got into a somewhat better position in life latterly, and for the confinement now referred to had engaged a regularly qualified man. Labour came on, and she suffered severely without making the slightest progress, the head never engaging pelvic brim for twenty-four hours. At her entreaty I was sent for. Ultimately there were four practitioners present. No good was done. She was becoming weaker every minute. It was resolved to operate. I did so through the head, evacuating the brain; and then I had to crush the head, and so extract: a long, terrible, disgusting, unscientific operation. The mother recovered. The process of this operation gave me quite a shock. I could not help thinking about the mangled remains of the child, and the positive danger there was to the mother unless these manipulations on the body of the child were carried out very carefully. I had food for reflection for a long time; and heartily prayed that such a case might never turn up to me again; and if it did, I thought I would be determined to do the Cæsarean operation.

It was not long till another case turned up,—a little deformed creature, unmarried, residing with her father on the south side of the river. She was at full time, and when I was sent for to see her she was in labour. The finger passed in impinged immediately on the promontory of the sacrum, which approached the pubes till within considerably less than 3 inches, determined, as far as possible, with my fingers. I immediately procured a medical friend, and proposed the Cæsarean section. But both he and another friend called in thought she could be delivered with the long double curved forceps. They pulled away, and I must confess I pulled away too, but for a long while to no purpose; till I bethought me of a very strong unyielding pair of forceps which I had inherited, and got them put on somehow. These seemed of as little use, and craniotomy was being discussed when another trial was made, and a very small child, unrecognisable as such about the head, which had been crushed at the brow, the cheeks, and the jaws, with its eyes protruding from their sockets, and as dead as a door nail, was drawn out. The mother succumbed in a few days. The issue of this case made me no happier. A worse result could not have happened had I performed the Cæsarean section, and I firmly resolved that such would be my course if ever again I had another such case.

Seven years ago another case came under my care. A little, exceptionally little, stout woman, with precisely the same kind of pelvis as in the last case, but without the spinal curvature. I urged Cæsarean section in this case, but it was rejected. It was thought she could be delivered safely with the forceps. They were applied by two strong practitioners, with intervals of rest; and ultimately all the pressure was put on the head through the blades that could possibly be put. After a struggle of several hours, a mauled dead child was brought into the world, with face distorted and skull driven in. This lady made a tedious recovery; it was months before she could walk; and she never forgave me. I think she had an idea I should have delivered her by inspiration. The last I saw of her she had left her husband—she was going to look after herself. The *modus operandi* in this case, and the result, were to me both dreadful; and I definitely determined within myself, that come what would for the future, I would be no part to the destruction of any child *in utero* under any circumstances whatever. If a child should happen to die in the legitimate and even "hearty" use of the forceps, I could feel in my mind to be contented; but to put such pressure on the head, or on any part of the body, and to prolong the operation of extraction over an indefinite period such as would completely destroy the child, I determined personally to countenance no longer.

This is seven years ago, and I have kept my word. I have never objected to the use of the forceps in moderate contraction of the pelvis. I do not object to turning, which, smartly and timeously performed, has saved some children in the same kind of cases. I have nothing to say even when the death of a child occurs under such circumstances, as deaths must occur; but I have never countenanced, and will never countenance again, the destruction of a living child *in utero* as a matter of selection.

Mrs W.'s Case.

This lady had a chequered married career. She was 40 years of age. She had been pregnant nine times. This was her tenth pregnancy. She was deformed and little; otherwise she was healthy. She had lateral curvature of the spine, protrusion of the lumbar vertebræ, projection of the promontory of the sacrum inwards—the space between the pubis and the sacrum was more than 2 inches and less than 3. The pelvis was flattened from before backwards. In her first confinement she had had one child which was extracted by crushing the head. Then labour had been induced between the sixth and seventh months. At one of them I officiated about the sixth month,—possibly the sixth month was completed. It was a footling. I delivered that child alive, and it blinked and wrought in convulsions till it died in a few days. She had had several abortions, which had proved almost fatal.

When she came to me on this occasion her seventh month had been completed. The child lay transversely in the womb—its head in the right iliac fossa, and the placenta, as determined by auscultation, on the left side. She was very anxious to have a living child. I considered this was impossible at this stage of her pregnancy. She was in a worse condition than she had been six years ago when I saw her last; and taking the usual methods of delivery, craniotomy was the only resource. I told her and her husband also that I did not perform craniotomy. I told her also that I did not think the risks would be much greater by the Cæsarean section now than by craniotomy, although I stated that others held a different opinion. The child, I considered, would in all likelihood be saved. She had had a variety of doctors. I counselled them both to consider the matter, and take such steps and employ any one whom they thought best. I had stated my conviction.

Ten days after this I received word that they had agreed to abide by my counsel. They had considered the matter. Nevertheless, gentlemen, you will believe me when I say, that it is only after such an important decision has been made that the full responsibility of one's advice comes home to him. Drs Park, Pollok, and Halket kindly consented to assist me. She was allowed to go to her full time. Indications of labour appeared on the night of 19th of January, and the operation was performed at 3 A.M. on the 20th. When she was placed on her back, in which position she never could lie easily, the uterus was tilted so far forwards that the fundus presented. Dr Park gave chloroform. When the abdominal walls were incised, the uterus appeared of a general livid appearance, no part more livid or congested than another to suggest the situation of the placenta. A small incision was made in that organ in the middle line, which divided some large veins which bled freely. The point of a pair of pressure forceps was gently but firmly pushed through the incision to the interior of the uterus, and the finger introduced. The incision was then safely prolonged up and down. Dr Pollock held the abdominal walls close against the uterus. A little of the water escaped, and the right shoulder appeared. I did not require to pass my whole hand into the uterus at this stage through the incision. I dipped my fingers round the chest of the child, and by a movement of rotation delivered it instantly. I attached a pair of pressure forceps to the cord, and Dr Halket immediately took charge of the child. It cried loudly the moment it was born. The womb contracted in a measure, the wound in its anterior part gaping widely, and leaving the whole interior surface of the left upper part covered with the placenta. I separated the placenta, but the womb remained soft and bleeding. It looked to me like a cut sponge. There was not the slightest effort by Nature towards the approximation of the sides of the wound. I held the edges together while Dr Pollok, I think, gave a subcutaneous injection of ergotin. This acted almost immediately, and the uterus contracted, squirting out blood from between the lips of the incision. The uterine incision was then carefully stitched up by eight or nine interrupted silk sutures. When a contraction came on, blood gushed out between some of the stitches. A few additional stitches were put in. Before the stitches had been put in, a bougie had been passed through the wound and down through the os. Dr Halket now introduced a tube from the vagina into the os, and blood passed through it. The peritoneal cavity was carefully sponged out, the abdominal wound stitched and closed, and she was put in bed with a good pulse and no sign of shock about her. She awoke in a short time quite composed, saw her baby, and was glad.

Dr Park, to whose kindness in this case and in many other cases during the past few years I owe a deep debt of gratitude, kindly undertook to wait by the patient.

The operation took a shorter time to do than it has taken me now to tell, as by half-past four I found myself in my own bed, but not to sleep. For some time she went on well, and on the third day I was beginning to feel almost happy. On the afternoon of that day things began to look a little bad, urgent symptoms set in in the evening, and she died suddenly on the fourth day. The whole circumstances of the treatment will be related a little further on.

But what I must say here is, that as a practical surgeon I consider that a death occurring like this one after such an interval after the operation must be due to preventable causes, and on this fact I will broadly base my argument for the performance of Cæsarean section.

This woman was of a nervous, hysterical, fiery nature; impatient of control and of suffering. She was a thoughtful woman, who had already endured much, which had somewhat broken her temper and spirit. Alas! I cannot but feel sorry that the operation was thus only partly successful: the child remains alive and well, but she died of preventable causes.

What, then, are these preventable causes? No post-mortem was obtained.

Were they in the operation? Was the toilet of the peritoneum not perfect? Before she died I opened the lower stitches, and drained a considerable quantity of serous fluid. Should there not have been a drainage-tube used from the beginning? I ask the masters of surgery with regard to these details of operative procedure, and they answer nothing. I ask for complete records of operative procedure, and find here and there only bald statements. Opinion that an operation should or should not be done will never do any good. Thus in the majority of text-books we find the *modus operandi* described by men who have never seen the operation. I have done a few abdominal sections myself, and am amazed at the directions that are sometimes set down for us.

She died, of course, of peritonitis.

The Cæsarean Operation a Success.

What, then, is wanted to make the Cæsarean operation a success? Study, thought, the elaboration of the operation, the discovery not only of the true principles of the operation, but of the after treatment, and to attain these ends the accurate, faithful, complete history of cases. I ask, therefore, those who have done this operation, with whatever amount of success, to come forward and state their cases. It is incomprehensible, unfair, terrible, from a surgical point of view, that cases have occurred here in the west of Scotland, and with all their attendant lessons have been relegated absolutely to oblivion. If they have failed, as I should say under such circumstances they are likely to have done, can they add one terror or difficulty more to this operation? I say, no. We are not acting like men here—men of science, of wisdom, of sincere desire to improve our profession. Are we to go on for the next thirty years guided by the same authority, or must we not now awaken from this lethargy, and consider the whole aspect anew? Our cases have been huddled up from the light of day, the statistical horror sits firmly on us, and we dare not write the awful words, Died after an operation. Why? I declare before Heaven, with all honesty of purpose, I shall never be deterred from performing my work in the best way that Divine Power has given me to perform it by all the statistics on earth. I shall never cease to seek the highest light and the best good of every one committed to my charge. I shall not be influenced by quasi-religious views any more than by fallacious and unmeaning statistics. But taking my stand as fairly as I can amidst the shining light of the progress of the last thirty years, I shall bring it to bear as far as I can on all difficult and dangerous questions. You, I, and all of us stand, as has been well said, before the tribunal of our fellow-practitioners. Yes, we stand before the tribunal of public opinion, of professional opinion openly, but we stand also before the tribunal of light, of progress, of science, as evolved in the history of the ages, and must render up finally an account of such talents as may have been bestowed on us to work faithfully to the Omnipotent Ruler of the Universe. Before that tribunal I stand abashed and awed; but otherwise seeking and endeavouring to do right, we need fear no foe.

I say again, with all earnestness, reconsider the whole question in the light of the science of the present day. Consider the cases; elaborate the work; to my mind the issue will be as clear as day.

Look at the question apart from prejudice and personal feeling. Say of the operation that it unfortunately may become popular. Never. As well say that amputation at the hip-joint, or excision of the scapula will become popular. They become necessary, and so long as time lasts and the mystery of gestation is carried on, so long I pray may men be found able and willing to tackle with any serious and dangerous condition of that process. I am not ignorant, and no Fellow of this Society is ignorant, of the fact of many cases of craniotomy having been done where the mother also has perished in the most dismal manner. Is it not awful to contemplate that for these last twenty or thirty years the ingenuity of us here has been exercised in inventing instruments for the better destruction of the child? Does it not strike us all as being a parallel to improving a system of hanging?

(To be continued.)

IX.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By Byrom Bramwell, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh.

XII. *Two Enormous Intra-cranial Aneurisms.*

The aneurisms which are met with on the large vessels at the base of the brain seldom attain to any size, and are in many cases quite unattended by symptoms during life. Such, at all events, was the character of most of the aneurisms in this situation which have come under my own personal observation. But cases are occasionally met with in which the aneurism is large and the ordinary symptoms of an intra-cranial tumour (headache, vomiting, double optic neuritis, etc.) are present. I do not, however, know of any case in which an intra-cranial aneurism reached the enormous size of the aneurisms in the two following cases. The first patient died in the County Asylum at Melrose, under the care of Dr Carlyle Johnstone; the second in the Royal

Asylum at Morningside, under the care of Dr Clouston; and I have to thank these gentlemen for having so kindly afforded me the opportunity of examining these remarkable specimens, and for so generously allowing me to record the cases and make use of their notes.

CASE 1.—*Chronic Amentia in a Woman, æt.* 43; *Syncopal Attacks; Headache; Obesity; Partial Left-sided Hemiplegia; Difficulty of Articulation and Deglutition; Progressive Stupidity and Drowsiness; Death two years and nine months after the Symptoms were first complained of; an Aneurism, the size of a small Orange, springing from the Right Posterior Cerebral Artery, and projecting into the Third and Lateral Ventricles; Softening of the Brain-tissue around the Tumour; Hæmorrhagic Pachymeningitis.*

C. F., æt. 43, was admitted to the Melrose County Asylum, on 13th May 1885, suffering from chronic amentia.

The present, which was the first, attack of insanity had commenced a year and a half previously without any obvious cause other than debility—the result of prolonged lactation and repeated parturition. The heredity history was not known.

The medical certificates on which the patient was admitted to the Asylum stated that "the patient is incoherent, does not comprehend ordinary questions, recollects neither times, places, nor faces, is dirty in her habits, wanders about aimlessly, neglects her children and household duties;" and that "she is fatuous, has lost memory, is stupid beyond description in manner and act, expressionless and aimless."

When admitted to the Asylum, the patient was reduced in condition, and her general health was considerably impaired.

On 11*th August* 1885 it was noted: There is some improvement; she is cheerful, free from excitement, willing to please, diligent so far as her physical powers will allow, but withal considerably demented. She is subject to syncopal attacks, and is at times dirty and inattentive to calls of nature.

On 29*th December* 1885 it is stated: She is somewhat brighter and more intelligent; works diligently in the laundry; is cheerful and happy; still very confused; silly and child-like in her talk, expression, and behaviour; pays little attention to the calls of nature. When she tries to dance at the ball she becomes very giddy and falls down.

25*th May* 1886.—She is now unable to do any work; is very unsteady on her legs; has become very much stouter; has a ravenous appetite; is very drowsy and childish, and wears an expression of silly content. Her memory is much impaired; the tongue is very tremulous; articulation is somewhat faltering.

16*th July*.—The mental and physical debility are steadily advancing; the patient is now scarcely able to walk or stand upright without assistance; there seems to be a general impairment of mobility, the left side of the face, left arm, and left leg being more affected than the right. She suffers from headache and giddiness, and shows distinct feebleness of articulation and deglutition. She smiles when spoken to, seems free from care, and apparently has almost no memory for recent events.

31*st July*.—The patient is very helpless and bedridden; the headaches and syncopal attacks continue; the paralysis of the left side, and the difficulty in articulation and deglutition are greater; the expression is blurred, and the lip muscles seem especially affected; occasional squinting of the left eye, with at times dilatation, at others contraction of the pupil, has been observed. The patient is conscious of her surroundings and of what is said to her, but is very stupid and drowsy.

On 10*th August* she was unable to articulate, and could only swallow a few drops of milk; the respiration was at times scarcely perceptible; the pulse was slow and feeble. She died on 12th August, two years and nine months after the commencement of the cerebral symptoms.

The post-mortem examination was made thirty-six hours after death. The body was very fat; the scalp was thick, the skull very thin and hyperæmic; the dura mater was rather thick, and its inner surface was dusky and covered with rusty patches. The pia mater was somewhat thick and opaque, and stripped off with some difficulty from the surface of the convolutions, but there was no actual decortication.

The upper surface of the brain presented a somewhat glazed and flattened appearance when the dura was reflected. On removing the brain, a large, dark-coloured, rounded tumour was seen at the base, protruding between the crura cerebri and the optic tracts; the general mass of the tumour was hard; at places it felt bony; at others elastic. The tumour could be readily felt through the corpus callosum; and after that structure had been divided from before backwards and the two hemispheres of the brain allowed to fall apart, the tumour, about the size of a small orange, was seen to occupy the cavity of the third ventricle, and to extend into the lateral ventricles. The tumour had evidently pressed upon and displaced the various structures which surrounded it.[1]

On subsequent examination, the tumour was found to be a huge aneurism, springing from the right posterior cerebral artery, just after its junction with the right posterior communicating artery.

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[1] After division of the corpus callosum the brain was not further examined, but was placed in spirit and sent to Dr Byrom Bramwell. The description given in the text is based, partly upon the examination in the fresh state made by Dr Carlyle Johnstone, and partly upon subsequent examination made by Dr Byrom Bramwell.

The aneurism was ovoid in shape, and measured, after hardening in spirit, $2 \times 1\frac{3}{4} \times 1\frac{1}{2}$ inches, the longest diameter being the antero-posterior, and the shortest the transverse. The narrow end of the tumour, which projected towards the base of the brain, seemed at one point to form a secondary sac or offshoot. This portion projected downwards and backwards, and, owing to the perpendicular direction of the section, is not shown in Fig. 58.

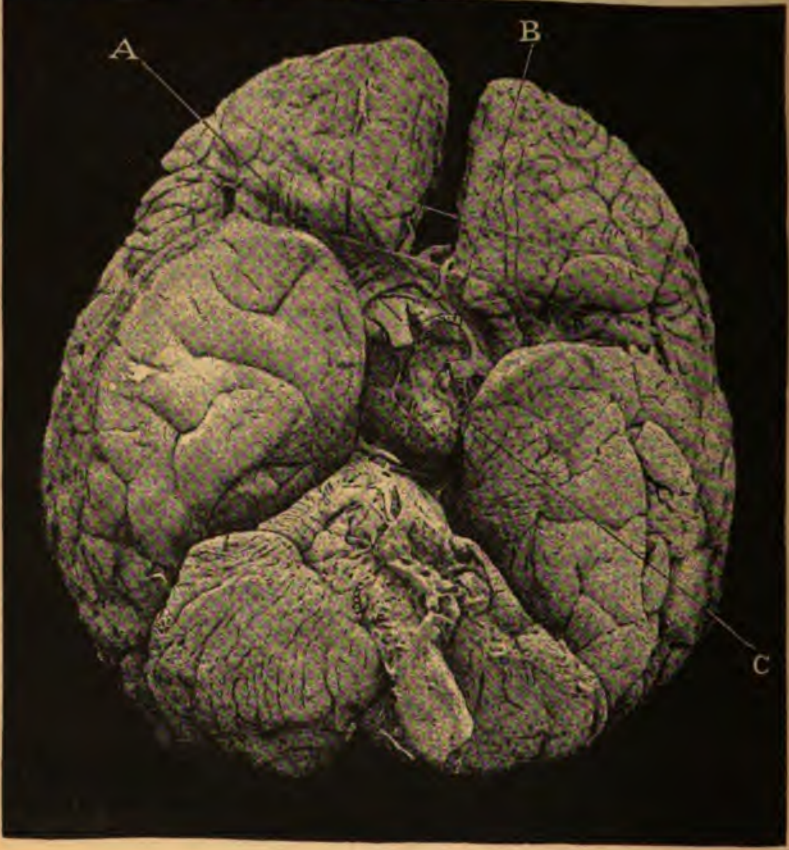

FIG. 55.—*Autotype reproduction of a Photograph of the Base of the Brain in the case of C. F., showing the Aneurism (C) projecting downwards in the Interpeduncular Space. (Considerably less than the actual size of the preparation.)*

The right hemisphere of the brain and the left lateral lobe of the cerebellum are smaller than the corresponding parts on the opposite side. Whether this difference was present during life it is difficult to decide. In consequence of the division of the corpus callosum and the long preservation in spirit, the relative position and relationship of the parts were somewhat altered. Before this photograph was taken the frontal lobes were fixed in position by means of a thin piece of string. The aneurism does not project downwards in the hardened brain (photograph) so far as it appears to have done in the recent state. The letter A points to the right, and the letter B to the left optic nerve, which are twisted backwards. Immediately above the part of the aneurism to which the letter C points, the left internal carotid artery, with a clot projecting from its cavity, is situated.

The wall of this secondary sac was infiltrated with calcareous matter; the wall of the main sac, which was very many times thicker than the wall of the vessel from which it sprang, was composed of dense fibroid tissue.

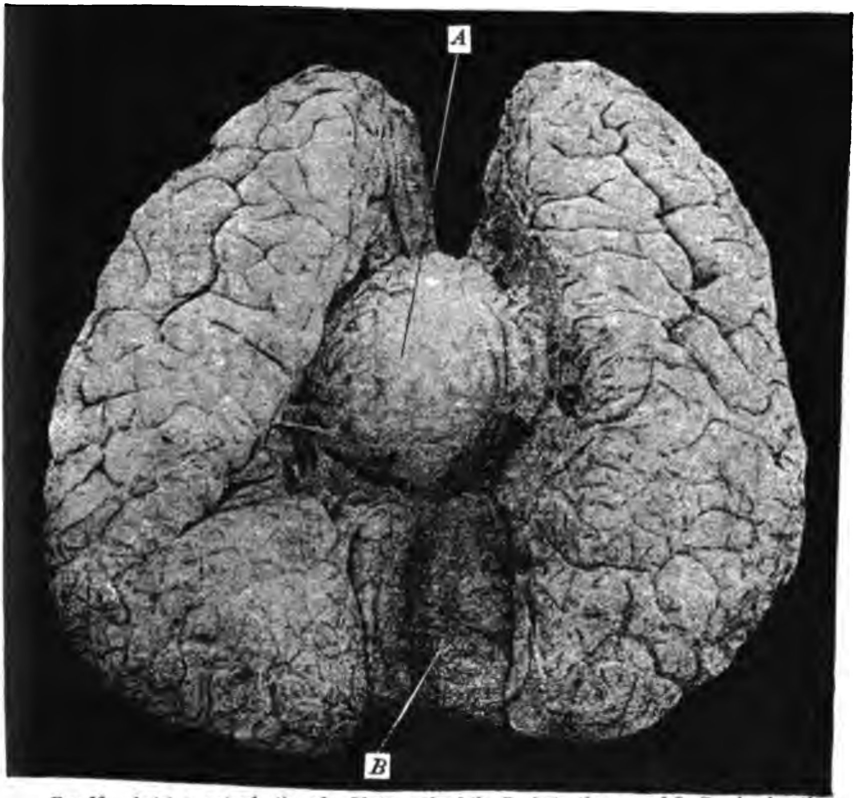

FIG. 56.—*Autotype reproduction of a Photograph of the Brain in the case of C. F., showing the Aneurism projecting upwards into the Third and Lateral Ventricles. (Considerably less than the actual size of the preparation.)*

The corpus callosum has been divided and the hemispheres separated so as to fully expose the tumour; the upper surface of the cerebellum has also been partly divided in an antero-posterior direction.

The aneurism was completely filled with a dense and beautifully laminated blood-clot. The clot in the small secondary sac seemed more uniform and older than that in the main tumour. The aneurism appeared, in short, to have undergone a complete natural cure.

The arteries at the base of the brain, including the posterior cerebral, were almost completely free from atheroma.

The brain itself presented no naked-eye lesion. On microscopical examination, the brain tissue around the tumour appeared to be compressed and softened, but the prolonged immersion in spirit was perhaps the cause of some of the alterations which were seen under the microscope. There was certainly no well-defined and extensive lesion.

The contents of the encephalon weighed 47 ounces. The *heart* weighed 10 ounces, and was healthy; the aorta was slightly atheromatous. The *kidneys* were cirrhotic, and weighed respectively 3½ and 4 ounces. The other organs were healthy.

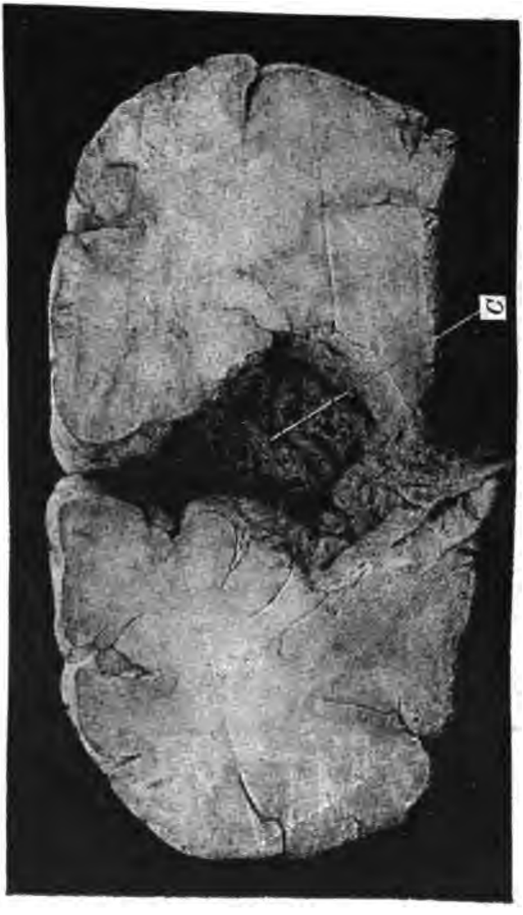

FIG. 57.—*Autotype reproduction of a Transverse Vertical Section through the Frontal Lobes in the case of C. F., showing a Cavity into which the Aneurism projected. (Slightly less than the actual size.)*

The photograph does not accurately represent the relationship of the parts during life, for the corpus callosum, which was during life stretched across the upper surface of the tumour, has been cut through, and the two divided ends are in the photograph widely separated.

Remarks.—The case is chiefly remarkable for the immense size to which the aneurism had attained, the direction in which it had grown, and the fact that it had undergone a complete cure by the formation of a solid, stratified coagulum in its interior.

The calcification of the wall of the smaller secondary sac and the density and thickness of the fibrous wall of the larger tumour showed that the aneurism must have been of old formation, and that it had probably existed for some time before the first symptoms were noticed.

The progressive character of the cerebral symptoms is a point of great interest (for the aneurismal tumour must, as regards its size at all events, have been stationary for some time prior to death), and was probably due, in part, to the cerebral softening which surrounded the tumour, and in part to the hæmorrhagic pachymeningitis.

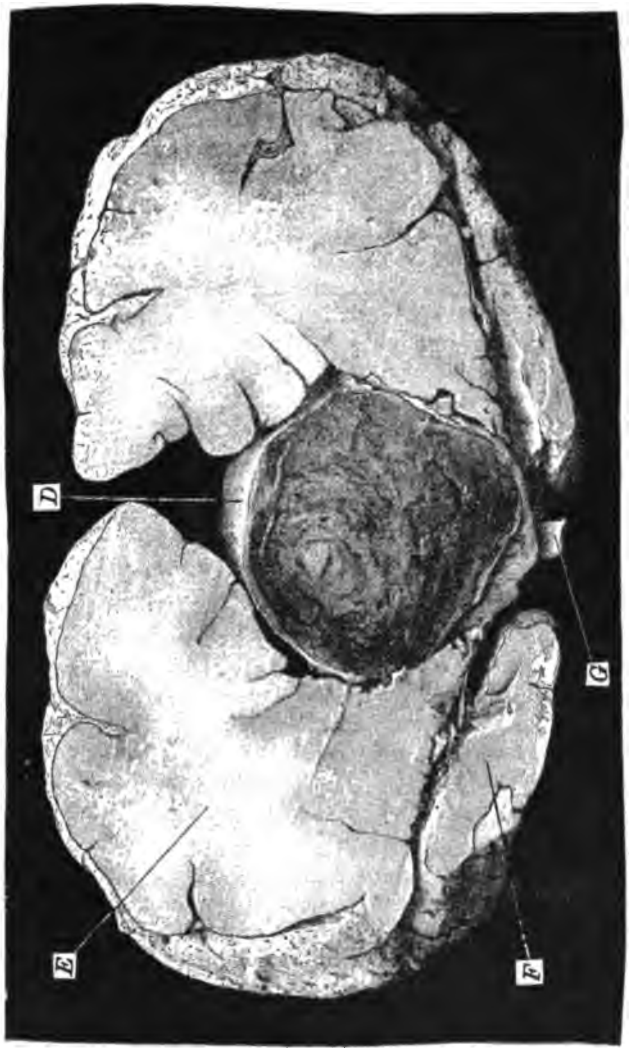

FIG. 58.—*Autotype reproduction of a Photograph of a Transverse Vertical Section through the Brain in the case of C. F., showing the maximum dimensions of the Aneurism. (Slightly less than the actual preparation.)*

The photograph does not accurately represent the relationship of the parts during life, for the corpus callosum, which was during life stretched across the upper surface of the tumour, has been cut through, and its two divided ends are widely separated in the figure.

The optic tracts and the optic chiasma were stretched by the pressure of the tumour, but did not seem to have been extensively damaged; and it was doubtless due to this fact that blindness was not a prominent feature in the case. It is not improbable, however, that some degree of temporal hemianopia may have been present. This symptom, which was met with in the next case, and which is almost always due to *pressure* on the centre of the optic chiasma, is very suggestive of a tumour of the pituitary body or an aneurism springing from one of the arteries forming the fore part of the circle of Willis. Temporal hemianopia is apt to escape observation even in sane patients, and would probably be most difficult or impossible to detect in lunatics in whom the mental deterioration was so advanced as in the case under observation.

Obesity has been frequently observed in cases of tumour of the pituitary body; but whether it results from the fact that the pituitary body is involved, or whether it is due to the changes which a tumour in this situation produces in the surrounding portions of the brain, does not seem clearly established.

The exact position of the tumour and its relationship to the surrounding parts of the brain, after the corpus callosum had been cut through and the preparation hardened in spirit, are well shown in Figs. 55, 56, 57, and 58, which are autotype reproductions reduced from photographs of the natural specimen.

In Dr Clouston's case, which I will now report, the aneurism was still larger, measuring, after it had been preserved in spirit, 2¾ × 2¼ × 1½ inches.

CASE 2.—*Temporal Hemianopia; Mental Derangement; Symptoms of a Cerebral Tumour; Blindness; Mania; Gradual and Progressive Hebetude; Death; an Enormous Aneurism of the Right Internal Carotid Artery within the Skull; Erosin of the Sella Turcica; Pressure upon the Optic Nerves, Optic Chiasma, and Optic Tracts; Softening of the Brain-tissue around the Tumour.*

J. B., æt. 31, was admitted to the Royal Asylum, Morningside, 3rd September 1884, on an emergency certificate, suffering from mania.

Previous History.—The patient's friends stated that he was of a lively and good-natured disposition until fifteen years ago, when he fell from a horse and received a blow on the forehead. Ever since the blow his nature has been changed, and he has become duller. The present, which is the first attack of insanity, commenced two years ago. He attempted to shoot his stepfather eighteen months ago, and has meditated suicide. His sight began to grow dim about two years ago, and about nine months ago he became quite blind. He was able to earn his living as a tramcar conductor in Glasgow until twelve months ago. His stepfather says that nine months ago Dr Wyllie diagnosed a tumour of the brain.

The medical certificates on which he was admitted stated: (No. 1), That he laughs immoderately without any cause; has delusions that people are going to bury him alive, and that he can see (being stone blind). Is restless at night; sometimes sleeps all day. (No. 2), Laughs without any cause; delusions that he sees Turks by the hundreds, and that they laugh at him. His mother states that he has had a tumour of the brain for many years; that he talks to himself, stands up on the bed during the night, and has to be constantly watched.

On admission, the patient's memory was found to be much enfeebled, but his speech was coherent. At times he was inclined to be dull; at others, slightly excited. He laughed occasionally without cause, and had delusions—one of which was that Red Indians come out of the press and walls, and fill his house; each Indian has a Scotch thistle on his head.

He had a vacant look about the eyes; the pupils were dilated and insensible to light; he was almost quite blind, merely distinguishing objects as shadows; he was also slightly deaf.

He was weak, but there was no muscular paralysis; the knee-jerk was present; the muscles were well developed, and the body fairly covered with fat. The sensory functions (except sight and hearing) seemed natural. The appetite was good; the pulse 76, weak; the temperature 96°·6 F.; the weight 12 st. 5 lbs. The heart, lungs, and abdominal organs were healthy.

Subsequent Progress of the Case.—On *4th September* it is stated: He was awake all night and was noisy; is disposed to be somewhat quick and irritable, but is fairly docile on the whole.

On *8th September* it is noted: That he has slept badly for the past three nights; sits by himself all day with his head bent down for the most part; seldom speaks, and sometimes gives a meaningless laugh.

On *14th September* it is stated: He eats very little, and sometimes has to be pressed to take enough food; and on *15th October* he is feeding better; sleeps a great deal during the day.

30th November.—During the past six weeks there has been little change. The patient is quite blind, but his hearing does not appear to be any worse.

1st January 1885.—He sits on the sofa all day with his head hanging down on his breast, as far as it possibly can; but his mental condition appears to be scarcely so devoid of intelligence as might be supposed from his look. At times he can answer simple questions as regards his health fairly well, and seems to retain his memory for recent events pretty well.

1st February.—Has been examined by Dr Berry, who reports that he suffered from temporal hemianopia on both sides. He recollected Dr Berry, under whose care he had been.

1st April.—No change. The patient sits during the day crouching with his head bent forward at such an angle as would choke any ordinary person, and appears to be asleep the greater part of the time. When forcibly moved, he sits up for a minute or two, and then slowly sinks down into his old attitude. Altogether, hebetude may be said to be his great characteristic.

There was no subsequent entry in the notes after this date. The patient died on 27th July 1886.

In his work on the *Subjective Symptoms in Eye Diseases*, page 107, Dr Berry gives the following account of the eye symptoms:—"John B., cork cutter, aged 28, first seen 28th March 1882, when he stated that his sight had been failing for some months. On ophthalmoscopic examination, the discs were found to be extremely pale. $V = \frac{20}{100}$ L, $\frac{20}{40}$ R. The acuity of vision did not materially change within the limits of illumination by which I retained full vision. The vision of the temporal half of the field of the left eye was abolished (retaining only slight perception of light), and in the right eye the temporal side of the field had also suffered a very considerable impairment of its function (loss of colour vision and very defective form sense). The portions of the fields retained in both eyes seemed to be normal in every respect, and there was a sharp line of demarcation between the healthy and defective portions. This boundary was nearly vertical, and apparently about 3°–4° to the temporal side of the middle line through the centre; the extent of the area of blindness being, however, greater in both eyes below than above. There was a doubtful syphilitic history beginning twelve years previously, which led me to diagnose a periostitis or gummatous swelling, exerting pressure on the chiasma. The patient did not return for a year afterwards, at which time the condition appeared to be very much the same, with the exception that both temporal halves of the field were now blind. His own statements were to the effect that he had been much better for eight or nine months, and had then got worse again. A complete examination of the central and peripheral vision was not made then, as he promised to come to the hospital next day. This he failed to do, however, and next made his appearance on the 29th of November 1883, when the condition of the fields of vision was as in Fig. 59, with $V > \frac{20}{200}$ R, $> \frac{20}{70}$ L., only slightly worse, therefore, than eighteen months previously—ophthalmoscopically; marked atrophy of both nerves. After this a rapid deterioration took place, and when he was admitted, on 8th February, as an in-patient under Dr Wyllie, the central vision was extremely defective, although the hemianopic nature of the blindness still remained marked. I had recommended him to seek admission some time previously, but he declared that an irresistible *drowsiness*, which lasted for days, had prevented him from coming. He was discharged on 23rd March almost quite blind, but otherwise apparently in better health; and the following was Dr Wyllie's report on 29th April:—Remains perfectly blind, except very faint perception of window; says, however, that on some days he sees objects pretty distinctly, being able, on such occasions, for example, to recognise his mother."

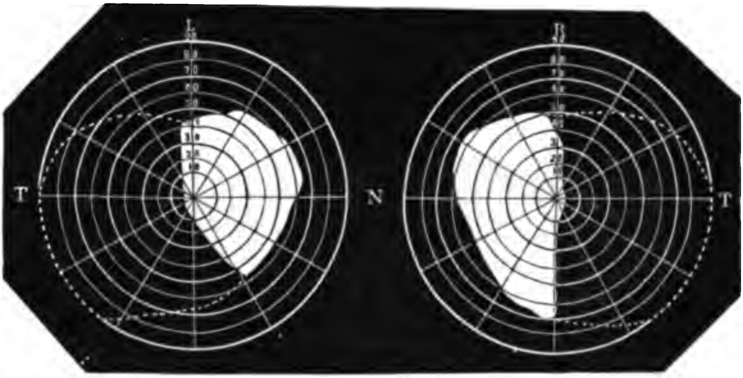

FIG. 59.—*Perimeter Charts of the Field of Vision in the case of J. B., taken by Dr Berry on 29th November* 1883, *showing Temporal Hemianopia. The white portions are the parts of the field which remain healthy.*

The *post-mortem examination* was made twenty-eight hours after death. The body was well nourished; the right pupil was more dilated than the left. The scalp, skull cap, and dura mater were normal.

On removal of the dura mater, the convolutions on both sides, but especially on the right, were flattened, as if by pressure from below.

On raising the anterior lobes, a cyst-like tumour, the size of a large orange, and measuring 3 inches in its longest diameter, was observed. The cyst was irregularly ovoid in shape, and of a dark colour; its walls were strong and fibrous. Two small subsidiary cysts, the largest fully the size of a large bean, projected from the lower part of the cyst on its left side. The orbital convolutions and the other portions of the base of the brain which were in contact with the tumour were flattened, but easily separated. The left optic nerve at its entrance to the cranial cavity was stretched over the tumour, and in its passage to the brain was compressed into a flattened band, which was adherent to the surface of the tumour. It was found impossible to dissect the tumour from the base of the skull, for it had eroded a hole the size of a large egg in the sella turcica, and was adherent to the bone.

The contents of the cyst were blood-clots in various stages of decoloration and of various consistency, the greater part being, however, semi-pulpaceous.

It was found that the right internal carotid artery passed into this enormous aneurism, for such was the nature of the tumour.

The base of the brain behind the Sylvian fissure was softened, and somewhat adherent to the tumour. The softening affected both crura cerebri and the adjacent convolutions.

The basal ganglia seemed normal. The anterior pair of the corpora quadrigemina were congested, being covered with large tortuous vessels. The lining membrane of the lateral and fourth ventricles was granular.

The specimen is represented in figure 60.

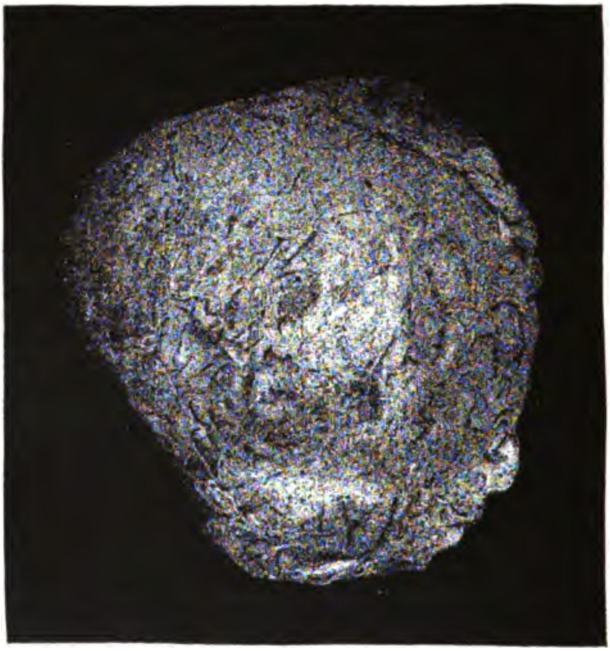

FIG. 60.—*Autotype reproduction of a Photograph of the Aneurism in the case of J. B. (Actual size after long preservation in Spirit. Photograph taken March 5th*, 1887.)

The heart was small and fatty, weighing 8 ounces; the abdominal walls, omentum, mesentery, and capsules of the kidneys were loaded with fat; the testicles were extremely atrophied; the pelvis was abnormally broad; the patient was slightly knock-kneed; there was well-marked phymosis; the mammæ were well developed; the pubic and facial hair was scanty. The other organs were healthy.

Part Second.

REVIEWS.

The Functions of the Brain. By DAVID FERRIER, M.D., LL.D., F.R.S., etc. Second Edition, Rewritten and Enlarged. With numerous Illustrations. London: Smith, Elder, & Co.: 1886.

DR FERRIER'S book has taken exactly ten years to come to a second edition. This may be fairly held as a proof that there is no great demand amongst medical men for scientific works, even although they bear very closely upon medical subjects, and contain much new and interesting matter. The present edition is made longer by 165 pages, but what is added seems to have been done in a judicious manner. The additions to our knowledge of the physiology of the brain and spinal cord, though far from being so considerable as during the seven years before the first edition was written, have nevertheless been numerous and important, so that much of the book has required to be rewritten. In controverted points evidence has been collected on one side or the other, so that even where the matter is still under discussion, the relative probabilities require readjustment. One naturally looks to see in what spirit Dr Ferrier deals with old controversies, and perhaps it is too much to expect that he should not favour the views to which he has committed himself. After a chapter on the Structure of the Cerebro-spinal Centres, the author passes on to the functions of the spinal cord. Here he comes to the vexed question of the bearing of certain experiments to prove the existence of consciousness in the spinal cord. There is the well-known experiment of Pflüger, in which a decapitated frog, after failing by rubbing a drop of acetic acid applied to the inner side of the leg, used the other foot to rub the seat of irritation. Ferrier lets us know that the late G. H. Lewes has criticised Ferrier's explanations on this point, but he avoids all mention of the criticism of Dr Cleland, though it seems clear that he has carefully measured the objections of the Glasgow professor, and tried to adapt his position against their force. We have no room for this controversy, but Dr Cleland's views may be found stated in the *Journal of Mental Science* for July 1883.

In denying all trace of consciousness to the spinal cord of the frog, Dr Ferrier finds his difficulties renewed when he comes to the experiments in which the cerebral ganglia are removed and the mesencephalon left. He tells us:—

"By a series of ingeniously contrived experiments, Goltz has shown that, even when the limbs of a frog were so fixed or placed in positions which could never have occurred in its past experience, the animal, without its hemispheres, retained the power of adapting its movements in accordance with these unusual and abnormal conditions. This would indicate that if these centres are centres merely of reflex action, the reaction is that of a machine possessing in some way the power of self-adjustment.

"But the mere faculty of adaptation is not necessarily a proof of consciousness, for, as we have seen, it exists in some degree in the spinal cord; and if it is not regarded as proof of conscious action on the part of the cord, neither can it be taken as such here; for it may be that the more complex adaptation manifested by the mesencephale is simply the result of more complex and special afferent and efferent relations."

It is to be regretted that Dr Ferrier has not given us some intelligible explanation of the *modus agendi* of these wonderful self-adjusting organisms. He observes that the ganglia of the invertebrates are not completely homologous with the mesencephalic ganglia of vertebrates; and we may add, neither is the spinal cord of the frog homologous with the spinal cord of man.

Dr Ferrier holds that the cerebellum is the great central organ of the co-ordination of the tactile, visual, and labyrinthine impressions. He observes that the special functions of the optic thalamus are still unknown, and there is a portion of the tubercula quadrigemina which has not to do with vision; but he is inclined to think "that these ganglia form an essential portion of the mechanism of the co-ordination of retinal and general sensory impressions, with the mesencephalic motor apparatus concerned in the complex responsive adjustments of equilibration, and the other adaptive reactions of which animals are capable after removal of the higher encephalic centres."

Professor Hamilton's theory that the corpus callosum is a decussation of the fibres of the internal capsule is dismissed by Ferrier with little ceremony.

In many points Dr Ferrier shows a wary scepticism. He will not admit the existence of a special muscular sense, and objects to the wanton multiplication of so-called centres to preside over every conceivable function. We hear of heat centres, and vomiting centres, and sugar-forming centres. Students find it easier, we imagine, to regard the nervous system as a series of parts anatomically and functionally separable rather than one great whole, with similar functions increasing in specialization, but never entirely specialized, the higher parts inhibiting the lower, the central parts representing the more peripheral parts till the complexity gets too great for human thought to follow.

One naturally looks to the chapter in which Dr Ferrier defends and justifies his own views on the motor area of the brain against the attacks of Goltz and others. In this task he shows much forensic skill. Ferrier tells us that there is no proof that Goltz ever succeeded in removing the whole motor area in the dog; but certainly Goltz holds that he has done so again and again, at least on one side, and there is no question that he has frequently removed some of the different motor centres, if not all at once, and that the paralysis succeeding these extirpations passed away through time. We do not think that Ferrier has succeeded in giving a complete answer to the objections of Goltz. Time will show whether all the observations or inferences of the Strasbourg professor are correct, but in the meantime they seem as trustworthy as those of any other observer. It is significant that Hitzig himself, the original discoverer of the so-called motor centres, admits, as the result of his vivisections, that after the extirpation of the motor areas, demonstrated by electricity, the lost function becomes in time in great part restored, the principal injury remaining appearing to be a loss of the sense of the position of the limb. Hitzig considers the spots indicated on the hemispheres to be simply "gathering places," from which motor impulses proceed. Hughlings Jackson, whose authority Dr Ferrier is so ready to own, also admits the vicarious substitution of function after parts are removed from the motor area of the cortex. He holds that while certain parts of the said area have in many cases more to do with moving certain groups of muscles, but still these are not their entire functions; and that when these areas are destroyed, other parts of the brain may supply the loss. Like some other physiologists, Dr Ferrier is disposed to give ground to Goltz in his experiments on the brains of dogs, but to make a stand on what is observed in the brains of monkeys. "It is necessary," he writes, "to seek for some other explanation of the apparent retention of voluntary motor power in dogs, after removal of the cortical motor centres, consistent with the doctrine of specific localization so amply demonstrated by the facts of experiment and clinical research in monkeys and man. For it is not to be supposed that animals constructed on the same anatomical type should differ so fundamentally in their cerebral organization that specific localization of function should be true of one and absolutely false in respect of another. Though dogs appear to recover from the effects of destruction of the cortical motor centres, the recovery is found, on careful examination, to be more apparent than real. As a matter of fact, they never recover those movements which are essentially cortical, nor do dogs which have been deprived of their cortical centres at birth ever acquire them. Though a dog after destruction of its cortical motor centres is able to stand, and walk, and run, it never, even at best, performs these actions as well as the fish, frog, or pigeon, without any cerebral hemispheres at all." We understand what Dr Ferrier means, though the statement that a dog never can walk as well as a fish is somewhat grotesque. His admission is tantamount to giving a share of the motor functions of the basal ganglia. Dr Ferrier seems to occupy surer ground in his observations on psycho-motor paralysis in monkeys. He vigorously defends the centres he indicated against the varying localizations of Hitzig and others; and he shows with success the advantages in using both the interrupted as well as the continued current in applying the electrical excitation to the hemispheres. On the whole it may be said that, though the division of the brain into motor and sensory regions is every year gaining fresh evidence, there are still great diversities of opinion as to the allocation of function. Meynert, in his work on Psychiatry, observes that Ferrier's centres have met with opposition from *all* other authors. On the other hand, Ferrier rarely adopts Meynert's views.

Dr Ferrier's claims to find centres for the different senses in different areas of the cortex have been received with considerable mistrust. The chapter on the localization of the auditory centre in the first temporo-sphenoid gyrus is very ably stated, and carries an air of conviction with it. It is somewhat amusing to see Ferrier quote the experiments of Loeb against Munk's localization of the visual faculty in the occipital lobe; while he warns his readers that they must not trust to Loeb when he sides with Goltz about the motor centres. While exposing the falsity and absurdity of the statements of Munk, Loeb is "specially worthy of trust;" but while he wages "a feeble and futile polemic against cerebral localization,"—*i.e.*, against Ferrier's views,—"he is afflicted with some strange intellectual blindness."

The chapter on the Hemispheres considered psychologically affords proof of the philosophical power of the author; and the concluding chapter, on Cerebral and Cranio-Cerebral Topography, is useful both to the physiologist determining the homologies of the brain of different animals, and also to the surgeon who is beginning to avail himself of the more exact diagnosis of brain disease.

As a whole Dr Ferrier's book merits great praise. He goes with an equal tread through many complicated paths of inquiry, and examines many difficult and doubtful questions with industry, care, and judgment. Thus he gives us a book which sums up the last results of multifarious researches in the anatomy and physiology of the brain and spinal cord, in which his own experiments bear a worthy and conspicuous share.

Monomanie sans Délire: an Examination of "The Irresistible Criminal Impulse Theory." By A. Wood Renton, M.A., etc., Barrister-at-Law. Edinburgh: T. & T. Clark: 1886.

This pamphlet contains an able criticism of the descriptions which some physicians have given of cases of moral insanity and irresistible impulses. The author has apparently no personal experience in insanity, and his strictures go no further than the texts which he cites. We have no room to discuss such complicated questions, but it is easy to see that physicians who believe in moral insanity will be ready to produce fresh examples from their own experience, nor will they be willing to receive all Mr Renton's canons of criticism; for example, he will not admit that a crime done without any appreciable motives affords a presumption of insanity if the intention be proved.

It is an advantage for medical men to know how insanity, which yields to criminal impulses, is regarded from a lawyer's point of view, and for this purpose Mr Renton's pamphlet will be useful.

Hip Disease in Childhood, with special reference to its Treatment by Excision. By G. A. Wright, B.A., M.B. Oxon, F.R.C.S. Eng., Assistant-Surgeon to the Manchester Royal Infirmary, Surgeon to the General Hospital for Sick Children, etc. With 48 Original Woodcuts. Pp. 246. London: Longmans, Green, & Co.: 1887.

This is a very valuable contribution to the important subject of hip disease in childhood—how important it is any surgeon to a hospital knows—and it is especially interesting as giving data of great value which contribute to the settlement of the *quæstio vexata* of the treatment of hip disease.

In a word this question is, How are we practically to deal with the enormous numbers of children with hip disease who flood the out-patients' room, and would, if admitted, fill every available bed in our hospitals? In every case, even if seen early, the case will be tedious; in many, especially if seen late, and if abscess be allowed to form, the result will be disastrous, not only to limb, but to life. Rest and extension for many months will, in a great proportion of cases, cure the disease; but our great general hospitals cannot bear the burden, and the home treatment, at least in the homes of the poor, is most unsatisfactory. Benevolence, public and private, may institute little special hospitals which keep the cases to their termination, but these are few and far between; so in many a neglected case the surgeon has to amputate at hip-joint or excise the joint. This book, while giving an admirable account of the symptoms, pathology, and general treatment of the disease, is chiefly valuable in its discussion of the question of the result of excision as compared with expectant treatment.

Mr Wright has an admirable series of 100 cases of excision. Of these 85 recovered, and 15 died. Of the deaths, however, 5 happened more than a year after the operation. Hence he speaks with more than usual authority when he says: "Treatment short of excision when once suppuration occurs is useful only as a palliative or a means of temporizing" (p. 96). This differs a good deal from Mr Marsh's results, which Mr Wright fairly quotes in a note. Mr

Marsh puts the mortality in cases treated by continual rest at 5 per cent., and even in cases of abscess at 6 to 8 per cent.

The question is still *sub judice;* but in the last twenty years an immense revolution in practice has taken place, and hip-joints are much more frequently and much more safely excised now than then. No practical surgeon who has hip cases to treat can afford to be without this excellent little book.

Ambulance Lectures; to which is added A Nursing Lecture in Accordance with the Regulations of the St John Ambulance Association for Male and Female Classes. By JOHN M. H. MARTIN, M.D., etc. With Illustrations. London: J. & A. Churchill, 11 New Burlington Street: 1886.

IT cannot be said that these are more than very ordinary ambulance lectures.

As good or better are probably being delivered daily throughout the country, and it is impossible to see why these should have been published. A new-comer on the field should offer some excuse for his presence, but in Dr Martin's book we can find none. There is the same old sketch of anatomy and physiology, the same "kinds of hæmorrhage" and ways of treating them, and the well-worn recommendations for steadying fractures and treating emergencies of various kinds. The author's own views on antiseptics are of the vaguest description, and, if the book is read at all, will do harm. After recommending that wounds be washed with cold water, and their edges held together with plaster, he adds, "keep out dust and dirt, and the air, which is loaded with germs, and in healthy constitutions, with proper rest, you may expect Dame Nature to effect a speedy cure." The author would have been better advised had he allowed these lectures to remain in their manuscript form.

A Summary of New Remedies. By THOMAS M. DOLAN, M.D. London: Baillière, Tindall, & Cox: 1886.

THIS book contains much useful and interesting information regarding many new and rare substances which are now being recommended in the treatment of certain diseases.

The names of plants and the natural orders to which they belong are spelt in a manner that few botanists would understand.

The Student's Manual of Venereal Diseases. By BERKELEY HILL and ARTHUR COOPER. Fourth Edition. London: H. K. Lewis: 1886.

WE are glad to welcome a new edition of this useful little work. It is a matter for congratulation that, without interfering with its admirable qualities, the original size of the book has very nearly been maintained.

The Veterinary Pharmacopœia, Materia Medica, and Therapeutics. By GEORGE CRESSWELL and CHARLES CRESSWELL, M.R.C.V.S. With Descriptions of the Physiological Action of Medicines. By ALBERT CRESSWELL, B.M. Oxon. London: Baillière, Tindall, & Cox: 1886.

THIS text-book for veterinary students is likely to have a wide circulation. The therapeutics might be more fully given in many instances, and in not a few cases there is a mixing up of human treatment with that of the treatment of the lower animals. It is not usual to speak of "gargles" as applied to the lower animals. This is probably the result of the therapeutics having been revised by a medical practitioner.

The Chemist's and Druggist's Diary, 1887. London, New York, and Melbourne.

IT is elegantly got up, and contains much useful information.

The Provincial Medical Journal: A Monthly Record of Medical Science, Literature, and Biography. Edited by THOMAS E. DOLAN, M.D. Vol. VI. No. 63.

THIS young contemporary contains much interesting matter—original articles, biographies, letters, essays—and is making progress as a representative of the general practitioner. This number has an exceedingly interesting and powerful article by Dr G. Granville Bantock on "Listerism: its Past, its Present, and its Future." One feature of this Journal is that it gives a portrait and a short biographical sketch of a *living* medical celebrity each month. Some of the victims selected are odd enough, and their autobiographies still funnier. Some evidently regard the portrait as a grand chance for an advertisement of the special claims they possess, or think they possess, to fame and practice.

One criticism we must make: the correction of the press is abominably ill done, the classical quotations especially being most awful. We may give one as a puzzle in its present state—

"Ehen Posthem lelintin anni," p. 125.

Supplement to the Fifteenth Annual Report of the Local Government Board 1885-86. London, 1886.

In this volume by far the most important and interesting matters are the reports by Drs Power, Cameron, and Klein, bearing upon and explaining the cause of an outbreak of scarlatina in London in 1885, and traced by them beyond any reasonable doubt to the presence of a diseased condition in certain milch cows when in milk at a farm from which families in the districts of South Marylebone, Hampstead, St Pancras, St John's Wood, and Hendon were supplied. The manner in which Dr Power traced the connexion between the dairy farm and the affected families is deserving of all praise. These reports should be studied by all medical men, and a digest of them might be with advantage brought under the notice of those who have to do with cows and milk supply.

Dr Klein has also a valuable contribution on the etiology of foot and mouth disease, in which he describes the definite form of micrococcus which he discovered in connexion with this disease, and which by culture he found to have the power of inducing the same disease in animals previously quite healthy.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXVI.—MEETING IV.

Wednesday, 2nd February 1887.—Prof. Grainger Stewart, *President, in the Chair.*

I. Death of the Oldest Member.

The President said that he thought it desirable, before entering upon the business of the evening, to allude to the fact that since the last meeting a much-esteemed member of the Society, Mr William Brown, had died. By the death of this gentleman the Society had lost the last of its original members. Early in its history Mr

Brown had held the office of Secretary, and subsequently that of Vice-President. It was unnecessary to speak at length of his efficiency as a professional man, his general culture, or his long career of Christian activity, but the disappearance of the last of their original members was worthy of special notice.

II. Election of Ordinary Members.

The following gentlemen were admitted Ordinary Members of the Society:—George Franklin Shiels, M.B., C.M.; T. Brown Darling, M.B., C.M.

III. Exhibition of Patients.

1. Cases of EMPYEMA were shown by *Drs Affleck, Cotterill, Russell, Duncan,* and *Caird.*

Dr Affleck showed a YOUNG WOMAN upon whom the operation of RESECTION OF RIBS had been performed for the cure of empyema, with entire success. The patient was admitted to the Royal Infirmary in June last, suffering from a well-marked empyema of the left side, which was discharging by four openings in the thoracic wall. It appeared that she had been ill for about eight months—first with pleurisy with effusion, which became complicated subsequently at short intervals by pneumonia, scarlet fever, and erysipelas. Empyema was the result, and an opening had been made to evacuate the pus, after which other three openings took place in the chest wall, and each of them discharged freely. There was also a fistulous opening into a bronchus, as large quantities of pus were daily expectorated. After continuing under treatment in Dr Affleck's ward for some weeks, the patient was removed in the beginning of August to Prof. Annandale's ward, where Mr Cotterill performed the operation of removing portions (each about 4½ inches in length) of five ribs. The patient rapidly improved and ceased to expectorate, while only a little pus came through the drainage tube, and this gradually diminished, till now it had entirely ceased and the wound had healed up. The chest wall had fallen in considerably, but yet good breath sounds were audible over the upper third or more of the lung. The patient had gained about two stones in weight, and was about to return to her occupation as a domestic servant. The case appeared in every way a suitable one for surgical treatment, there being no evidence of phthisis, nor of kidney or other complication.

Dr Cotterill showed the PORTIONS OF RIBS removed.

Dr Russell showed a CASE, the details of which appear in his paper.

Dr Duncan showed TWO CASES OF EMPYEMA at present under his care in the Infirmary. One was the third successful case after resection of portions of eight ribs. He had before that resected portions of three ribs, which was not entirely satisfactory. He had five times resected portions of eight ribs, three of the cases being quite satisfactory, one nearly so, and the other died of pyæmia after having gone home, where a drainage-tube was allowed to slip into her thorax. In the case shown the resection was followed by absolute healing, but about a fortnight or three weeks afterwards an abscess formed, and required the removal of a strip of bone from the chest wall, a very difficult thing to do, inasmuch as the front of the chest was one mass of bone. It was now practically healed. The lower ribs which were not resected bulged out, and the spine showed lateral curvature. There was breathing in the upper part of the lung. The second case was one of simple empyema without resection of ribs. A complete cure had been brought about in seven weeks by drainage. A rib was resected because the drainage was thus freer, and the severe pain which sometimes resulted from the pressure of the tube in the intercostal space was saved. The lung had expanded, and a point of interest was that the wound throughout the whole course of treatment remained aseptic without the spray.

Mr Caird showed a CASE OF RESECTION FOR EMPYEMA in a child. In summer 1885 the pleural cavity was drained with antiseptic precautions, and duly healed. The patient was in poor circumstances and bad health, and reappeared with the sinus opened up. A metal tube was introduced, and washing out practised without much improvement. Accordingly, a year ago, resection of portions of the fourth, fifth, sixth, and seventh ribs was performed, a counter opening made, and a good result ensued.

2. *Dr P. H. Maclaren* showed a MAN, aged 19, presenting 132 cutaneous tumours all over his body, except on the palms of the hands and the soles of the feet. The case looked like one of fibroma molluscum, but when some of the tumours were removed their contents were seen to be sebaceous. No openings could be detected anywhere in connexion with the tumours, and pressure could not expel any fluid or solid material, thus differentiating the case from so-called molluscum contagiosum. These cases were very rare. Hebra had seen one, Rayer also had seen a case, and Dr Allan Jamieson had described one in *Ed. Med. Jour.* 1873, in which there were 250 tumours scattered over the body.

3. *Dr Cotterill* showed a CASE OF COMPOUND COMMINUTED FRACTURE OF UPPER AND LOWER JAWS. The patient, a young man, had fallen from a roof, and the blunt spike of a railing had entered outside the left eye, and had torn the hard and soft tissues obliquely across the whole breadth of the face. The external angular process of the frontal was broken off, the left malar bone was smashed into several pieces, the superior maxillæ on both sides were comminuted and completely divided in a horizontal direction backwards to their posterior limits, so that the alveolar edge and palatal processes, with the palate bones, fell away from the upper fragments of the maxillary bones. The hard palate was

also split into two halves in the antero-posterior direction, and the teeth of the upper jaw lay over the chin. The lower jaw was comminuted near the angle on the right side. Every fragment of bone which was attached to periosteum was left, and these fragments were fastened together with some twenty silver sutures. The lower jaw was drilled and brought together by wire, and loops of wire put round various of the teeth in upper and lower jaws to keep the bones in position. The man had made an excellent recovery with comparatively little disfigurement, while all the fragments of bone wired together had survived with the exception of two or three very small pieces.

IV. EXHIBITION OF PATHOLOGICAL SPECIMENS.

1. *Dr Littlejohn* showed—(1.) THREE SPECIMENS OF AORTIC DISEASE, in all of which sudden death had occurred. The various stages of atheroma were well marked. (2.) A FRACTURE OF THE SHAFT OF THE HUMERUS close to the joint, and attended with much displacement. The specimen had been taken from the body of a gentleman, much decomposed, found in a house where it had lain for at least six weeks. (3.) THE STOMACH, INTESTINES, GULLET, AND WINDPIPE of a man who had swallowed a quantity of Bow's liniment. There was marked evidence of intense irritation.

2. *Dr Woodhead* showed—(*a.*) the LUNG, PLEURA, and CHEST-WALL from a case of EMPYEMA. The empyematous cavity extended up as far as the apex of the lung and down to the angle between the diaphragm and the ribs. It had been drained at the level of the eighth rib. (*b.*) SPECIMENS of TUBERCULAR PLEURISY.

3. *Dr H. A. Thomson* showed—(1.) A STUMP from a healthy man aged 43, amputated at the middle third of the leg four years ago for railway injury. It had healed well, except a small area in centre of face of stump, which never cicatrized. As he suffered much pain from ulcer, reamputation was performed 3 inches higher up. On dissection the nerves were found at the point of section to have formed bulbous enlargements, *beyond which, however, they were prolonged downwards,* and converging, were fused into dense masses of cicatricial fibrous tissue, connected with ulcer on skin. (2.) CONICAL STUMP from man aged 17. The leg had been amputated at middle third in childhood for disease of ankle. Gradually the stump had become more and more pointed, and one month ago an abscess formed over the end of the tibia, and burst on surface. A frozen section showed that the tibia had grown downwards 1 inch below the lower end of the fibula, so as to protrude the skin, to which it was closely adherent. The fibula was atrophied. The posterior tibial nerve ended in a bulbous enlargement 3 inches above the lower end of the tibia.

V. ORIGINAL COMMUNICATIONS.

Prof. Annandale read his paper on INTERNAL DERANGEMENTS OF THE KNEE-JOINT.

Dr Haddon demonstrated, and said the practice of the manipulations recommended by Dr Wharton Hood for such cases had earned him (Dr Haddon) a considerable reputation as a bonesetter.

Dr Duncan said it must not be supposed that the method of manipulation devised by Hutton and described by Wharton Hood was to be put in practice in every case of derangement of the knee-joint. He had seen a good many cases in which it had been put in practice with most disastrous results. Not only so, but the tearings of the semilunar cartilage which took place might be greatly aggravated by wrong movements of this sort, and want of success often followed the operation. The patient often came to know the proper method for doing this in his own case better than either bonesetter or surgeon. Mr Annandale's paper was one of very great value, as showing the possibility of curing a great many cases which had hitherto been always difficult to treat. There were a considerable number of people going about with conditions of the knee-joint which it was not easy to describe, the result of injury, or as Mr Annandale put it, the result of strain on the joint. The paper showed that a certain number of them, where there was no palpable loose body, might be cured by opening the joint. Many were to be met in other ways; sometimes by apparatus, which might have to be of an elaborate character, meant to prevent the joint doing certain movements, such as that of rotation. Recently he saw a gentleman having both joints in this condition, in which he hinted the propriety of interfering surgically; but the patient was not prepared to submit, as he was kept comfortable by an apparatus. A remarkable fact in connexion with these cases was the tender spot which existed midway between the internal lateral ligament and the inner side of the patella just over the internal cartilage. As to the bodies known as loose cartilages, the direct method of removal was the most satisfactory, and was practised by most of them. He had had a number of varieties. The last one reminded him more of the exostosis of the distal phalanx of the great toe, with cartilage at one end and bone at the other, than anything else. Many of them had no cartilage at all.

Dr Cotterill said the pain in these cases arose from the loose body being locked between the joint surfaces, and not because it was merely loose. It should be remembered that the semilunar cartilages in the healthy joint had a considerable range of movement, moving backward in flexion and forward in extension. The locking of the joint always took place when the cartilage, being abnormally loose, was carried too far back in flexion, and then got nipped between the bones in the act of extension. The fatty or fibrous tumours (upon one of which he had operated) were in reality an overgrowth in the alar ligaments, which were placed on each side of the subpatellar synovial cushion. The function of these alar pads and cushions were (in conjunction with the posterior and lateral ligaments and other parts) to prevent over-extension of the knee-joint, by coming in between the bones on full extension. When the alar pads were hypertrophied, this action was, so to speak, anticipated or exaggerated, with the result that the joint became locked. Dr Cotterill did not in the least agree with the remark made by one speaker that the manipulative proceedings described were originated by bonesetters, or restricted to their practice. He had known them, used them, and taught them for several years. As he knew it, the method in dislocation of the internal cartilage was to fully flex the thigh on the abdomen and the leg on the thigh, to turn out the foot, and then quickly and thoroughly to extend the leg and thigh. This method he had frequently used, and almost always with complete success,—having, amongst others, completely relieved Dr Scott Lang himself of a dislocation of the internal cartilage. In the cases where permanent success had attended these manipulations, it was presumably due to the fact of a limited synovitis being set up by the movements; and this had sufficed to glue the cartilage into its proper place, when it had been reduced by the manœuvre described above.

Dr Scott Lang stated, with reference to luxations or subluxations of the semilunar cartilages, that Dr Cotterill and Dr Haddon had been successful in the immediate reduction of such. The manipulations which they described, however, ought to be founded on exact anatomical knowledge. He noticed a similarity between the manœuvres recommended by Dr Haddon and Dr Cotterill. Dr Haddon struck the knee violently on the outer side of the joint; Dr Cotterill's plan was to rotate the tibia outwards. Now, each of these manœuvres would have the effect of separating the internal condyle from the inner portion of the head of the tibia, and so of freeing the internal semilunar cartilage should it be held imprisoned there. This was probably the most common form of luxation, and hence the frequent success of the treatment. There were cases, however, to which it was wholly inapplicable. For example, there was a dissected specimen preserved where the external cartilage had been entirely torn from its surrounding attachments, and stood vertically between the condyles. There were other cases where the external cartilage became displaced only when the knee is completely flexed. Such cases as these required totally different treatment. He had found on experimenting on the cadaver that after having got a cartilage jammed between the femur and tibia, violence used in a wrong direction might have a very injurious effect. Taking hold of the foot, one possessed great leverage, and the cartilage could be split or crushed and severely damaged between the femur and tibia. Regarding the use of retentive apparatus, he wished to bring one practical point before the Society. It was this, supposing the internal cartilage to be the one affected, the tibia ought to be kept as much as possible rotated inwards, in order to obviate recurrence of the luxation. Should the external cartilage have been affected, rotation outwards would procure a corresponding safety for it. This was palliative treatment, but like the so-called palliative treatment of hernia, it might be also curative if well and carefully applied. This treatment was based upon both anatomical and clinical evidence. Anatomically it could easily be seen that when rotation of the tibia was made inwards it was done by the semitendinosus, gracilis, and sartorius on the inner side of the knee-joint, and the inner portion of the head was inevitably at the same time brought into close apposition with the internal condyle. The internal semilunar cartilage was thus securely held in place. In rotation outwards the biceps acted in a similar manner as regards holding the external cartilage safely in its place between the external condyle and the outer part of the head of the tibia. In some fragmentary writings it would be found stated that so-called "internal derangement of the knee-joint" occurred when the foot was everted by the toe striking a stone. Now, it was distinctly traceable that this statement invariably referred only to luxation of the INTERNAL CARTILAGE. This coincided in a remarkable manner with the anatomical point above referred to. But further, he could in his own person testify to the practical value of this hint; and he had, from the knowledge of it, been able to give valuable advice to others. One of his fellow-students, however, now in practice, had a subluxation of the external semilunar cartilage, and in his case the knee felt much safer and stronger when the foot was pointed outwards. In fact, he had reproduced the luxation by crossing one leg (the affected one) over the other and turning the toe inwards. He thought these facts explained the chief, if not the only points which could be attended to in the construction of retentive apparatus to prevent the recurrence of such luxations.

Dr Caverhill described a case in which he had succeeded by manipulation in enabling a man to walk home a distance of about six miles after being brought in a cart suffering from what was called dislocation of the knee-joint.

The President asked Mr Annandale if he could tell anything of the future history of the case of myeloid sarcoma?

Mr Annandale said he presumed the patient was well, as if anything had occurred he would have heard of it. He agreed with Mr Duncan that most surgeons had met with cases which had come under the notice of Mr Hutton, and there was a good deal of humbug about them. The bodies called loose cartilages might come from one of three sources—the synovial membrane, deposits within the joint, or portions of articular cartilage knocked off. He should like to direct attention to the paper of Dr Scott Lang, who had not done himself justice that night. He had carefully studied, on anatomical and physiological grounds, the mode of displacement of those cartilages, and had shown them the proper movements to make for their reduction.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVIII.—MEETING IV.

Wednesday, 9th February 1887.—Dr HALLIDAY CROOM, *President, in the Chair.*

I. *Dr Brewis* exhibited—(*a.*) A PAPILLOMATOUS CYST OF THE BROAD LIGAMENT, which he removed from a patient last summer. The cyst was a monolocular one, and was situated between the layers of the broad ligament, probably originating from one of the parovarian tubules. The outer extremity of the Fallopian tube and the ovarian fimbria were seen to be stretched over the surface of the cyst, and from its interior grew a papillomatous mass covering an area the size of a half-crown piece. At that portion below the ovarian fimbria the cyst wall was greatly thinned, and, as the malignant proclivity with which the contents of these papillomatous cysts invade the peritoneum is well known, Dr Brewis thought that the cyst had only been removed in time. The danger of tapping is made manifest by the characters of the cyst.

(*b.*) DISEASED UTERINE APPENDAGES, removed from a patient in December last. Description of appendages of right side:—*Fallopian Tube.*—About two inches were removed, with corresponding part of broad ligament. The tube is tortuous, thickened, especially towards its outer end, and has a semicartilaginous feel. Its fimbriæ are not separated one from the other, but are glued together by inflammatory bands into a large fleshy-looking mass. The opening cannot be found, being evidently occluded by the inflammatory bands. Over the isthmus, and protruding through the peritoneal covering, are several hard bodies the size of millet-seed, and resembling calf's-foot jelly in appearance. The fimbriated extremity is not adherent to the ovary, but is quite free. The ovarian fimbria has its course from the fimbriated extremity to the ovary covered over, but at the ovary its open end is seen, its fimbriæ having the same fleshy consistence as those of the fimbriated extremity of the tube. On making a section through the tube its inner muscular layer is seen to be greatly thickened. *Peritoneum.*—The whole broad ligament at the time of removal was seen to be in a state of deep congestion, evidently of long standing, of a dark crimson colour; the vessels between the layers stood out prominently. It was greatly thickened, the thickening being caused by increase of muscular tissue and vascularity. Along the anterior surface of the peritoneum, covering the outer half of the tube, inflammatory bands ¼ inch in depth can be seen running parallel to the long axis of the tube. The *ovary* is a little bigger than normal, and has the usual characters of one affected with cystic degeneration. At the time of removal the ovary had a dark blue colour, caused by the surface being studded with cysts containing fluid. The parovarium is not well marked. The appendages of the left side have essentially the same characters as those of the right. *The characteristics of the appendages are*:—1. The old-standing congestion of the broad ligament as a whole. 2. The thickening of the tube, principally of its inner muscular layer. 3. The closure of the fimbriated extremity without adhesion to the ovary. 4. The presence of inflammatory bands on the anterior surface of the broad ligament running parallel to the long axis of the tube; showing that, if the case had been left alone, probably there would ultimately have been a folding and binding together of the outer half of the broad ligament on the inner. 5. The cystic degeneration of the ovaries. The patient had been sterile, and had suffered pain for nine years. Latterly the pain had become constant.

II. *Mr Skene Keith* showed—(*a*.) A CYST OF THE BROAD LIGAMENT, which contained between 40 and 50 lb. of fluid, showing extensive enucleation, barely one quarter of the surface being covered by peritoneum. (*b*.) DISEASED OVARIES AND TUBES removed from two patients, one of whom had had the cervix uteri sewn up by the late Dr Angus Macdonald. (*c*.) A UTERUS, showing in the one specimen examples of the various forms of fibroid tumours, viz., subperitoneal, interstitial, and submucous, with, in addition, a vascular polypus growing by a pedicle from the upper part of the uterine cavity.

III. *Dr Halliday Croom* showed—(*a*.) An OVARIAN CYST; (*b*.) An OVARIAN CYST; (*c*.) CYSTIC OVARIES AND DISEASED TUBES; (*d*.) A FIBRO-CYSTIC POLYPUS; (*e*.) MYXOMATOUS DEGENERATION OF CHORION.

IV. *Dr Freeland Barbour* showed, for Dr Underhill, a DISEASED PLACENTA.

V. *Dr W. L. Reid*, Glasgow, read a paper on THE CLINICAL TEACHING OF MIDWIFERY AND THE DISEASES OF WOMEN, which appears at p. 865 of this Journal.

Prof. Simpson remarked that before replying to the able paper they had just listened to, he would like to have heard from some of those present the difficulties they experienced on going into practice. The subject was a very wide and important one, and he was greatly taken with Dr Reid's ideal school of Midwifery and Gynæcology; the difficulty was in its realization. Dr Reid wants these subjects studied in the third winter; but this is not possible, on account of the third winter being fully taken up with other classes. Midwifery must be taught in the last winter or in the third summer. It was desirable that students should have had theoretical training in Midwifery before practical, and for that purpose fifty lectures are by no means all that is necessary. The subject of full teaching of Midwifery and Gynæcology will probably come before the General Medical Council soon. In England a student requires to have twelve cases, in Scotland only six. The number of cases a student has handled before being admitted to examination is of importance. But it is far more important to have some way of testing the experience the student has gained by his cases. By being compelled to attend a three months' course of clinical instruction such as is given every quarter in our Maternity, the students would have the opportunity of seeing a large part of the emergencies that they are likely to meet with afterwards, and would learn how to make the most of the cases they do attend. The number of cases is no guarantee of knowledge. With regard to the teaching of Gynæcology, in the University the students are taught Gynæcology clinically in the wards, and at the final examination one-sixth of the clinical cases are taken from the Gynæcological Ward.

Dr Berry Hart had little exception to take to what Dr Reid had said. The whole medical curriculum requires revision. It was absurd to expect a student to take all his classes out in four years. The course should be extended to five years, and the last two years should be occupied with practical work. Students are already overburdened. In the Maternity Hospital during Professor Simpson's term of office, the Professor gives a clinique once a week in the wards, and Dr Hart holds one twice a week on the outdoor cases, in which he explains the mechanism and treatment of the cases that have been attended by the students. Gynæcology can only be taught practically to small sections. Students should only be taught to do the bimanual and to pass Sim's speculum, they should never be allowed to pass the sound, as the bimanual is sufficient. In Dr Hart's opinion the systematic lectures in the Glasgow Maternity should be abolished.

Dr Leith Napier knew how deficient students and practitioners were in their knowledge of the subjects under discussion. Obstetrics and Gynæcology are two separate things. We cannot expect to make every man a skilled gynæcologist; and when a general practitioner meets with a case that is difficult to diagnose, the method is always open to him to send the patient to the hospital. Students, in addition to being taught to do the bimanual, should be taught to pass the sound. Six cases of midwifery are probably all a student can attend, but he can learn as much from six as from twenty. If a man is a safe practitioner it is all that is needed. Gynæcology is much better taught now than formerly. In Aberdeen there is no Gynæcological Ward, but students are examined on such cases with clinical surgery.

Dr Freeland Barbour felt that there was great difficulty in remedying the teaching of Gynæcology. It could only be taught in small cliniques. He taught his students at the Cowgate Dispensary to practise the bimanual, to pass the sound and the catheter, and how to use the curette and apply carbolic acid to the uterus. With regard to the teaching of Practical Midwifery, Dr Barbour said he would like to see the plan of the Glasgow Maternity, of having a house-surgeon to help students with their outdoor cases, adopted in the Edinburgh Maternity.

Mr Skene Keith said that Professor Simpson went to the root of the matter when he said that we have not a sufficient number of cases of practical midwifery to supply students with. He knew it was impossible to teach Gynæcology in a large University such as ours. He agrees with Dr Hart that the sound is a dangerous instrument, and should not be handled by students. It was not wise to teach students to make application to the interior of the uterus. In teaching how to pass Sim's speculum, it would be well to see that the patient is put in the proper position. He thought it would be a good plan to have a house-surgeon at the Maternity to go out with students to their cases.

Dr Carmichael said it occurred to him to remark that students should be congratulated on the greater advantages they now possess, and especially in having such excellent clinical instruction at the Maternity Hospital. The method of teaching on the cadaver had not been introduced into this School; elsewhere it had been found extremely useful.

Dr Jas. Ritchie said that systematic teaching should precede practical. He agreed with Dr Hart that it is perfect nonsense to expect students to get up their work in four years. Many of our best men had passed well in four years, but we must make laws for average students. All students should be taught Gynæcology, not to operate, but to be able to recognise and treat ordinary cases.

Dr Foulis said that all were agreed that it was most important that men in general practice should be well grounded in a knowledge of Midwifery and Diseases of Women, as such cases formed a large part of the practice of the general practitioner. Probably the most dangerous cases are met with in Midwifery, and if a man does not know what to do in an emergency, as in cases of ante- and post-partum hæmorrhage, lives may be lost. For the teaching of all that is necessary in such cases, and for the teaching of the general diseases of women, we have now in Edinburgh abundance of material, and most excellent teachers; but, unfortunately, the time of the student is so taken up with grinding at less important subjects, that in the short course of four years' curriculum it is quite impossible for an ordinary student to get a knowledge of the all-important subjects of Midwifery and Diseases of Women. For long Dr Foulis has held that the only way out of the difficulty is to abolish, once and for ever, out of the usual course of medical study the subjects of Botany, Chemistry, and Natural History. These subjects should form part of the general education, and no man should be allowed to begin his medical studies until he has passed an examination in such subjects, then he should devote the whole four years of the medical curriculum to the study of Anatomy, Physiology, Pathology, Materia Medica, Surgery, Midwifery, and Diseases of Women. A great part of the student's time at present is taken up with such subjects as Botany, Natural History, and Chemistry, whereas the most important subjects of Midwifery and Diseases of Women are almost entirely neglected. It is not until we have commenced our work as general practitioners that we find how great has been our mistake. A five years' course of medical study would exhaust many men, therefore Dr Foulis advocates that the four years' curriculum should be still followed out, but that it should be devoted entirely to the all-important and practical subjects already named. In this way alone can we get over the difficulty as to the proper teaching of Midwifery and Diseases of Women in our Universities.

The President said the clinical teaching of Midwifery and Gynæcology had interested him for seventeen years. He agreed out and out with what Dr Foulis had said about Botany, Natural History, and Chemistry. With regard to the teaching of Midwifery, he thought there was no difficulty if we had only time at our disposal to teach. A student should be obliged to attend clinical teaching in Midwifery as much as Clinical Medicine. The teacher should give clinical instruction every morning, and the house-surgeon should go round the wards every evening with the students. There should also be a clinical lecture given once a week. Students should live near the Hospital, and leave their addresses with the house-surgeon, so that they could be summoned when an operation was going to take place. He had been found fault with by the Managers of the Maternity for teaching too much, and for having too many students. From seventy to eighty students attended his cliniques, and the objection was that sepsis might be brought in; but this had been proved to be a groundless complaint, as no deaths had occurred under his charge, owing to proper antiseptic precautions having been taken. He agreed with Dr Napier that there was no want of material, and that a student could learn more from one case at the bedside in the Maternity than from half-a-dozen attended alone. With regard to Gynæcology, he did not know how it was to be taught, as when you begin to teach to a large number of students the patients leave. He thought the difficulty could be got out of if cadavera could be got, and the bimanual and passing of the sound taught from them. The difficulty was in obtaining the cadavera. With regard to theoretical teaching, Dr Croom said that you can make a summer course of three months as complete as a winter one of six months, by giving five lectures on Midwifery in the week and two on Gynæcology.

Dr Berry Hart mentioned that you can remove the pelvic organs post-mortem, and after soaking them in glycerine and corrosive sublimate, fix them in a dry pelvis.

VI. *Dr Berry Hart* read a paper on HOW CAN THE ACCOUCHEUR BEST GUARD THE FŒTAL HEAD WHEN PASSING THE PERINEUM? which appears at p. 889 of this Journal.

Professor Simpson thought Dr Hart was right as to the incorrectness of the term extension in the third movement. But the term flexion applied to the first movement was also incorrect. Extension is the converse of flexion; it is a distinct movement occurring after rotation within the pelvis, and, as it must have a name and looks like extension, and ends with separation of the chin from the sternum, it is called extension. Dr Hart's ideas as to grasping the head were somewhat new, but the essence of the manipulation is what we have been in the habit of carrying out, the essential part of which is the effort made to guide out the head so that its smallest diameter passes through the outlet. Professor Simpson is not sure that pushing back would be at all times advisable. It had been his rule to apply the palm of the hand to the perineum and the fingers over the vaginal aperture; the hand feels the strain put on the perineum, which it can resist if necessary. The fingers are left free to guide the occiput forward and outward. When unanæsthetized the patient experiences a sense of relief from the perineum being supported.

Dr Leith Napier, from a good many years' practice, could corroborate Dr Hart's method. It was sometimes of great value to support the anterior lip of the cervix to cause flexion. Dr Hart's method is a refinement of the thumb in the rectum plan. The fact of supporting the perineum must shorten it; any pressure on the perineum is bad. Dr Hart's paper is worthy of all praise.

Dr Milne Murray agreed that the term extension was a fallacious one, used in a too limited sense, but thought that it should be retained for want of a better. Extension consisted of a sliding forward of the occiput and a departure of the chin from the sternum. He did not think sufficient stress had been laid on the fact that the perineum was sometimes torn by the shoulders. Some years ago, while attending a case with a student, he was struck by the fact that pressure with the thumb on the distended perineum caused it to tear. Undoubtedly, filaments connected with the hypogastric plexus and from the cord are distributed to the perineum; and, from experiments that he had conducted on animals, he had found that if an electrode be introduced into the recto-vaginal septum a spasm of the uterus is set up. When the head is crowning a similar result occurs, and pressure on the perineum at this time may augment the uterine force. In his own practice Dr Mnrray does not touch the perineum.

Dr Foulis said he was not in the habit of supporting the perineum in his practice, but he kept two or three fingers pressed against the head or advancing part in such a way as to cause it to move forward as closely as possible under the pubic arch. By doing so you could control the rapid advance of the head, and, at the same time, allow time for the soft parts to dilate, and also assist the expulsion in the line of the axis of the outlet. It should also be borne in mind that when the patient lies in bed with her legs drawn up the perineal structures were tightened, while by causing the legs to be stretched straight out these parts were considerably relaxed. A knowledge of this fact was of importance, and should be taken advantage of when the perineum was being distended to bursting point.

Dr Berry Hart said, in reply, that with regard to the term extension he always defined it when he used it. He also defined flexion. The point raised by Dr Murray was by far the most valuable one. It is interesting to know that a reflex mechanism does exist, but he does not agree that pressure with the thumb will aggravate it. You must have the thumb on the perineum to prevent the sinciput from pressing down. He does not agree with those who don't support the perineum, because in cases where you arrive too late you frequently find the perineum badly torn. The relaxation of the parts brought about by straightening out the legs, as mentioned by Dr Foulis, is well known.

CARLISLE MEDICAL SOCIETY.

SESSION III.—MEETING IV.

Thursday, 10*th February* 1887.—Dr MACLAREN, *President.*

Dr Maclaren showed a case of RODENT ULCER, healing after several applications of chloride of zinc paste.

Dr Lediard showed a case of EXCISION OF ELBOW, after a dislocation treated by a bonesetter.

Dr Macdougall read a paper on the "REMEDIAL VALUE OF BLOODLETTING."

Dr Lockie said that acute pulmonary œdema was not described in the ordinary English text-books. In Niemeyer there is a description, and he strongly recommends bloodletting. In a case of a shoemaker, over 60 years of age, a moderate bleeding gave relief in about an hour; in a second attack, a larger bleeding gave immediate relief.

Dr Barnes said that he had never felt justified in resorting to bloodletting in pneumonia. In acute pulmonary œdema he used digitalis and ether; in puerperal eclampsia, pilocarpin.

Dr MacPhail had seen benefit from bloodletting in two cases *in statu epileptico.*

Dr Lediard had seen a case of alcoholic epilepsy bled on two occasions, with remarkably good results.

Dr Maclaren said that bleeding was a remedy of unquestioned power. It had gone out of fashion, partly because it had been abused, and partly because we now have remedies, such as amyl nitrite, which have much the same effect. He had under his care a case of periodical bloodletting in a minor degree. A lady with amenorrhœa, with an undeveloped uterus, suffered every month from headache and malaise. She now uses two leeches monthly with good effect.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

RESORCIN.—In the *New York Medical Record* for 27th November 1886, Dr Ludwig Weiss recommends resorcin "as an effective remedy in all furuncular and phlegmonous inflammations; it absorbs the inflammation, if used in time, by destroying the germ locally as well as in the lymph canals leading from the point of infection, at the same time acting as an anæsthetic on the terminal filaments of the sensitive nerves. This is accomplished in the surest way by the method of scarification and continuous impregnation."

ANTIFIBRIN.—Antifibrin has been used for several months in the Edinburgh Royal Infirmary, and "has been proved superior to antipyrin, kairin, and thallin, in its freedom from accompanying disadvantages, such as the production of vomiting, rigors, and other discomforts at the various stages of its action."—*British Medical Journal*, 19th February 1887.

CHLORIDE OF METHYL IN THE TREATMENT OF NEURALGIC AFFECTIONS.—From an experimental paper with the above title, published in the *Kansas City Medical Index* (December 1886), Dr Dudley Tait draws the following conclusions:—1. Chloride of methyl spray may be used with great advantage in all neuralgic affections; its sole indication is pain. 2. It can be successfully resorted to in view of eradicating pain in the course of various pulmonary affections, in acute and chronic rheumatism, and also in affections similar to writer's cramp, etc. 3. In trifacial neuralgia precaution is of absolute necessity, but does not constitute a counter-indication. 4. One application often suffices; however, two, and exceptionally several, applications are necessary. 5. The majority of neuralgic affections are definitely cured by this treatment; success has sometimes been obtained in neuralgias symptomatic of Pott's disease, pelvic tumours, etc. 6. The slight and *transient* pigmentation that sometimes follows this treatment is of no importance; it disappears in the space of two weeks. 7. Experiments seem to indicate that analgesic properties of chloride of methyl are due to its action on the superficial terminal expansions of the nerves of the skin.—*Therapeutic Gazette*, February 1887.

METHYLAL, A NEW HYPNOTIC.—MM. Mairet and Combemalle have studied the physiological action of methylal, an acetal obtained by the action of potassium upon permethylal. This substance is a hypnotic; and to judge from the rapidity of its elimination, and the absence of disturbance on waking, a hypnotic which does not accumulate in the economy, and possesses but slight toxic properties.—*British Medical Journal*, 12th March 1887.

GUAIACUM AS AN EMMENAGOGUE.—In the *Birmingham Medical Review* for January 1887, Sir James Sawyer states that he has given guaiacum in a large number of cases, and regards the drug as an active remedy in promoting the menstrual secretion in a large proportion of cases of amenorrhœa. It appears most efficient, when given alone, in those cases in which the cause of the amenorrhœa is obscure; that is, in those cases in which there is no obvious spanæmic deterioration to which the menstrual deficiency is referable. He gives 10 grains of the powdered resin of guaiacum, stirred in a wineglassful of milk every morning before breakfast. The remedy may thus be given safely for some weeks. In a few instances it has been found to be necessary to suspend temporarily the administration of the drug, on account of the production of a little abdominal pain and purging. In some cases of dysmenorrhœa guaiacum has been found to possess considerable curative efficacy. In those cases of dysmenorrhœa in which we can find no vice producing menstrual obstruction of a mechanical nature, and in which there are no inflammatory or plethoric signs, the ammoniated tincture of guaiacum is a reliable remedy when given during the painful period. From half a drachm to a drachm may be given as dose in a wineglassful of water every two or three hours until the pain is relieved.—*Therapeutic Gazette*, February 1887.

TAPIOCA ROOT AS AN ANTISEPTIC.—A remarkable substance, which is possessed of powerful antiseptic properties, has been extracted by Dr Peckolt from the roots of the tapioca plant. To this the name of sepsicolytin, or fermentation-hinderer, has been given. A very small quantity, mixed with fresh albumen, is said to preserve it for upwards of six months without deterioration. As this principle is in all probability present to a considerable extent in the well-known "cassareep" of the West Indies, it is obviously not poisonous. The possibilities of use for an antiseptic free from injurious action on the system are very great, both from a culinary and medical point of view. Its action on putrid fevers, and in all diseases in which albuminous changes take place rapidly, seems worthy of investigation (*Provincial Medical Journal*, 1st November 1886).—*Therapeutic Gazette*, January 1887.

THE MEDICATION OF PHTHISIS.—In a recent number of the *Progrès Médical* the editor discusses the changes in the treatment of phthisis which modern pathological researches would indicate. Recent suggestions in antibacillar treatment are the inhalation of hydrofluoric acid and the rectal injection of sulphurous gas. We are able, however, to hope for very little from these methods. The means for combating tuberculosis which seems most worthy of serious attention is the use of iodoform. This substance has been tested by injection in cold abscesses, by inunction in tubercular meningitis, and internally given in enlarged glands and pulmonary tuberculosis. The purity in which iodoform is now made, our better knowledge of its solubility and its poisonous properties, enable us to use it as a most important agent in the extirpation of a local tuberculosis before the organism can become affected; it has thus an important part in preventive and hygienic medication. We must agree with Jaccoud in placing the administration of nutritious elements as still our most important duty to the phthisical patient. Cod-liver oil, to the extent of 4 ounces daily, is of the greatest benefit, and especially those oils which contain iodine and phosphorus in greatest amount.—*Therapeutic Gazette*, February 1887.

THE DRUGS WHICH INCREASE AND DECREASE THE SECRETION OF MILK.—Giurles calls attention to the peculiar properties of *Ditana digitifolia*, which he claims possesses the power to stimulate the secretion of the mammary glands, confirming the statements published in a previous issue of the *Gazette*. The author found an opportunity to try the remedy in a number of wet-nurses, and pronounces himself as extraordinarily satisfied with the results obtained. In some instances, in which the secretion was almost wholly absent, the ingestion of an infusion of the plant produced a copious supply of milk. In Italy an ethereal tincture of *Ditana digitifolia* combined with syrup has been known for a long while under the name of "galatiofore." The blossoms and buds of the plant, besides, possess diaphoretic properties. The same author asserts that *Rhamus alaternus* and *Ligustrum vulgare* have properties precisely opposite to those of *Ditana digitifolia*—*i.e.*, they decrease the secretion of milk. The author uses an infusion of these plants (45 grains of the leaves to 6 ounces of water), and orders for several days this quantity of the infusion to be used up twice a day (*Journal de Médecine de Paris*, 11th July 1886).—*Therapeutic Gazette*, February 1887.

THALLIN IN DISEASES OF CHILDREN.—Steffen writes in praise of thallin in fevers in children because of its ready solubility in water, its freedom from disagreeable taste, its prompt effect, and lack of ill after-effects. A depression of temperature occurs an hour after taking, and persists three or four hours. The doses range from two-thirds of a grain to two grains, and rarely need be repeated more often than twice in twenty-four hours. The fall of temperature ranges from a degree and a half to four; this is dependent not only upon the patient's peculiarities, but varies with different hyperpyrexias. In typhoid fever and in lung diseases the greatest effect is observed; in scarlatina, measles, and diphtheria the result is least apparent. In rare cases only, when the temperature rises rapidly a second time, a decided chill and cyanosis, but without collapse, have followed the reduction of temperature by thallin (*Medicinisch Chirurgische Rundschen.*, 1st December 1886). —*Therapeutic Gazette*, January 1887.

MEDICAL PERISCOPE.

By Francis Troup, M.D.

Berlin. Klin. Wochensch., No. 3, 1887.—Erb, of Heidelberg, details a case of myxœdema in a woman of 35 years. Her illness had developed quite slowly for five years. She had borne three children; the menopause had set in early, when she was 28 years of age, and for two years afterwards her bodily and mental condition was normal. Then headaches and pains in the upper extremities began, with a feeling of great weariness and enormous weight of all the limbs, and her complexion became pale and yellow. The feet and hands became thicker, and were cold and bluish-red. All her actions became clumsier and more difficult, without, however, any paresis. The hair began to fall out and her memory to fail, although intelligence did not seem affected. The face became stupid-looking, the speech slow, the voice hoarse. Sexual desire absent.

Her condition when brought to hospital was as follows:—

She looked, though only 35, more like 50 or 60 years old. The facial expression was one of stupidity; intelligence good; answers slowly, but correctly; voice deep and hoarse; the head big, face very broad, with flattened, broad nose; eyelids thickened, but of a very different kind from œdema; lower lip pouting; forehead and naso-labial wrinkles very deep, and bounded by considerably thickened rolls of skin.

The colour of the face was pale, anæmic, with a yellow-brown shade. The scalp was thick, and could be easily slid over and lifted from the bones. The sagittal and lambdoidal sutures were mapped out by two or three parallel furrows caused by swelling of the skin. The skin of the forehead and face felt soft and tender, was not scaly, and could be lifted up from the parts below in broad, thick folds; it did not pit. Ears were free. The lips were pale red; the gums were not thickened. The tongue was very voluminous (5·5 cm. broad when moderately protruded).

Torso colossally strong; neck and back very broad; circumference of thorax above mammary line, 102 cm.; below the same, on a level with the xyphoid, 95 cm. Skin very thick, and everywhere, especially on abdomen, could be lifted in non-elastic, 7–8 cm. broad folds.

Arms were voluminous, plump, without contour of muscle; no fibrillary or other twitchings; from the elbows down, blue-red, cyanotic; hands cold.

Hands and fingers remarkably large, broad, and thick; the skin can be pinched up. .Circumference of the upper arm, 30·5 cm.; of forearm, 27·5 cm.; of wrist, 18·8 cm.; proximal phalanx of middle finger, 7·6 cm.

Lower extremities also very thick, particularly the thighs; skin thick, of a marble appearance, dry, cold. No œdema.

Gross motory power normal. Sensibility over all the body for all kinds of sensations normal. Tendon reflexes of normal strength. No ataxy; no disturbance of muscular sense; no increase of muscular irritability.

The inner organs and body temperature normal. The thyroid could not be felt on palpation. The laryngoscope showed no thickening of epiglottis; vocal cords broad, white; doubtful thickening of mucous membrane. Blood showed no abnormality microscopically. Urine showed slight trace of albumen. Electrical examination gave nothing abnormal qualitatively or quantitatively. Patient was treated by lactate of iron and extracts of nux and quinine, and with galvanization of the sympathetics of neck and head. It is interesting to note here the early disappearance of the menses, and the apparent absence of the thyroid.

SOUNDING OF THE FRONTAL SINUSES (*Ibidem*).—Professor Jurasz, of Heidelberg, shows that this is quite possible, and can be carried out in many cases without much difficulty in the living subject. He demonstrated before his colleagues in a case of cancroid of the frontal skin, and which had laid bare the sinuses, that he could pass his sound from the nose and make it appear in the open sinuses. He has sounded in twenty-one cases of healthy and sick persons, chiefly in catarrh of the frontal sinuses. In five cases his manipulation was easily carried out on both sides. In six cases great difficulty was experienced on one side or other, which, however, could be overcome; and in ten cases he could not manage to introduce the sound at all. In the failures he does *not* reckon cases in which neoplasms, swelling of mucous membrane, or deviation of the septum, covered up the opening leading to the sinuses, but only those where this opening was easily seen. This is not a large percentage of successes, but no doubt will be increased by more perfect manipulation and greater practice than he hitherto has had.

As regards the mode of proceeding: The sound must be knobbed and extremely thin and fine. Hitherto he has used only metal sounds, about 11–15 cm. long, but he thinks that fish-bone ones might be preferable. He thinks they are better without a handle. The most important problem is to find the opening of communication. The difficulties which crop up frequently do not lie alone in swellings and hypertrophies of the turbinated bones, polypi, and other pathological processes, bendings of the septum, etc., but also in the fact that the ostium frontale has no set shape, and shows many varieties; it may even not be present at all on one of the sides. Whatever the anatomical conditions may be, the anterior segment of the infundibulum, at the anterior end of the middle turbinated bone, is the place where the opening of communication is to be sought. The anterior beak of this middle turbinate serves as guide for the search. Between this and the outward lying uncinate process of the ethmoid, the infundibulum forms a channel which, when the head is inclined backwards, is more or less perpendicular, closed above in a semicircular manner, and below becomes narrower and ends in a point. The upper rounded-off segment of the channel which, according to this description, has the form of a large comma, represents the opening of which we are in search, and into which the sound has to be brought. New difficulties in the passing of the sound may arise here, owing to the inconstancy of the form of the communicating canal. Measurements made on a number of dead bodies showed a length of canal of 12–16 mm. Its lumen is unequally wide,—narrowest in the middle, widest at the mouth. The mouth leading to the sinuses is often much dilated and funnel-shaped. It is also important to know that the canal is not always straight, and does not always lie in the sagittal plane. Its course is often outwards or inwards from this plane, and in the same person may be unsymmetrical on both sides. From all this it follows that the sound must be guided with a light hand, cautiously and without much pressure, particularly when an obstacle is met. If this is not attended to, false passages may easily be made.

The indications for this operation are chiefly in simple and purulent catarrhs of the sinuses, when their secretion has stagnated and cannot escape downwards through an impervious naso-frontal duct. This simpler operation may also render unnecessary trepanation of the frontal bone from the outside, or trocar-puncture from the nose, where serious damage may be caused to the ethmoid.

CASTRATION IN EPILEPSY (*Ibidem*).—Schramm, of Dresden, relates two successful cases of extirpation of the ovaries for severe epilepsy, and in one of them the removed glands were quite healthy, and yet the cure was complete. He points out, however, that the operative indications must be proved in the most perfect manner, whether the fits are the outcome of some diseased alteration of the genital organs or menstrual process, and are to be looked upon as a reflex utterance of sexual life. The selection of such cases will always be difficult. So long as we possess so little experience of an artificially brought about menopause operating as a remedy for menstrual neuroses, it seems yet premature to operate when there is no pathological anatomical indication in the genital organs.

DYSTROPHIA MUSCULARIS PROGRESSIVA (*Ibidem*, No. 4).—Dr Otto Buss relates two cases, under the above name, of primary myopathy, and considers that Erb's "Juvenile form of progressive muscular atrophy," "Hereditary muscular atrophy of Leyden," and Duchenne's "Infantile form of progressive muscular atrophy," are mere varieties to be classed under one head, as dystrophia muscularis progressiva.

The patients' histories are related at length, and as they were no better after three months of treatment, they left the clinic. Before doing so a small piece of the left biceps muscle was excised, and presented the following appearances:—

It looked pale, and was much less red than healthy muscle. There was no yellowness of colour. Examined and teased out in chloride of sodium solution the results were the following:—In all the preparations there was rich abundance of interstitial connective tissue. Fatty tissue was not present, only a few drops of fat. The fibres of connective tissue had waxy contours. The breadth of the primitive fibres was very diverse, a few were very broad, others normal, others very small, and between, all possible transitions of size. The transverse striation was in general not very clear, but yet in very different degrees. In many fibres it was clearly visible, in others so delicate as to be only indicated, in others it had entirely disappeared; in such, however, the longitudinal markings were mostly clearer. The measurements were: The broadest had a diameter of ·090 to ·130 mm. Some had ·060–·090 mm.; then middling ones of ·030–·060 mm., which correspond to the normal; then very slender ones of ·016–·030; and, lastly, very slender ones of ·008–·0012 mm.

Isolated, very slender primitive fibres showed within short distances numerous sarcolemma nuclei; those fibres had lost their transverse striation and looked like polished glass, others were hyaline. A great number of fibrils, broad as well as narrow, contained more or fewer small granules, which were grouped irregularly or in rows. Those grains were fat chiefly, but some were also albuminous. Those granular fibres appeared very like the granular casts seen in urine. In the thicker muscular fibrils processes of segmentation were going on. In the broadest connective tissue strands, which single bundles of fibrils separated from each other, there were found isolated, very slender primitive fibrils without transverse striation, and with a hyaline, faintly glittering appearance. They showed abundant sarcolemma nuclei, and, more or less copiously, grains of fat of diverse sizes.

In the connective tissue besides, finely granular detritus, scattered fat cells, and blood pigment were found.

Other parts of this biceps, hardened in Müller's fluid and absolute alcohol, were embedded in paraffin, and sections of them made with the microtome.

The microscopical examination of these sections, stained with picro-carmine, gave the following results:—

Transverse sections of the primitive fibrils were not polygonal but perfectly round. Their size was very diverse, beside those of normal breadth lay others, hypertrophic and atrophic, in rich abundance. The isolated bundles of fibres were separated from each other by an abundant fibrillar connective tissue, which penetrated everywhere between the primitive fibres. Nowhere could there be seen any apposition (*Aneinanderliegen*) of primitive fibres. In the larger connective tissue bundles, slender, irregularly formed rudiments of muscular fibrils were visible; those coloured more red than yellow with the picro-carmine.

The connective tissue nuclei were visibly increased in number. The adventitia of the bloodvessels seemed slightly thickened.

PERISCOPE OF GYNÆCOLOGY AND MIDWIFERY.

By J. Milne Chapman, Inverness.

Chemical and Experimental Researches on Eclampsia (Drs Doleris and Butte, *London Medical Record*).—Guided by the idea that the peculiar symptoms of eclampsia were caused by intoxication resulting from the presence of bodies of the nature of ptomaines, a series of observations were made with the blood of five women, subjects of eclampsia while in the obstetric wards. The following simple process was adopted, all unnecessary complications having been sedulously avoided. To the blood (about six fluid ounces) obtained by bleeding, was added twice its volume of ether, the mixture being frequently shaken. It was allowed to stand for from twenty-four to forty-eight hours, and the ethereal layer carefully decanted, filtered, and finally evaporated. The residue was treated with a small quantity of water acidulated by the addition of hydrochloric acid, and after filtration the filtrate was evaporated in a watch-glass, at a temperature not exceeding 104° F. By these means a crystalline residue, of varying purity, was obtained from the blood of the first four patients examined. Under the microscope the crystals presented a long needle-like appearance, occasionally fusiform in shape, with forked or slanting ends. The crystals were sometimes separate, sometimes grouped in stars or bunches. They were insoluble in water and only slightly soluble in alcohol, but were so in ether and acidulated water. Heated on platinum foil, they turned brown, but never entirely volatilized, a whitish residue remaining. Treated with a mixture of hydrochloric and sulphuric acids, they did not give a violet colour, nor was a rose or violet colour produced by iodic and sulphuric acid and bicarbonate of sodium, these being tests indicated by Selmi for certain ptomaines. From the small quantity of the crystals obtainable, no definite information could be obtained as to their actual nature. The experiment was made of injecting two rats subcutaneously with a solution (2 cubic centimétres) of the crystals. One of them, the larger of the two, showed no symptom, but the other was found dead after an attack of polyuria. Further experiments on four sparrows led to paralysis on the side of the injection, followed by somnolence and death, although the quantity injected was extremely small. The blood of four of the women (three of whom died) yielded a distinctly crystalline residue; but from that of the fifth, who recovered promptly, no such crystals could be obtained. No variations in the quantity of urea in the blood could be discovered to account in any way for the symptoms.

TREATMENT OF THE HYSTERICAL ATTACK (Rault, *France Médicale*).—The writer gives the following simple method which he has found very efficacious in controlling an hysterical fit. It consists in making firm and constant pressure over the supraorbital nerve at its points of emergence from the supraorbital foramen. The head is held securely between the palms of the hands, while pressure is made over the nerve on each side with the thumbs. The writer says that the patients under this treatment first contract the facial muscles with an expression of pain, cry out, and then take several quick successive inspirations. The breath is held for a few seconds, and then, with a long expiration, the muscles relax and the attack is ended. The pressure of the thumb should now be relaxed, otherwise it may have the opposite effect and excite another convulsion. Pressure over any nerve-trunk at the point where it becomes superficial will have the same effect; but the supraorbital nerves are chosen because of their convenient situation.

PUERPERAL FEVER MICROBE.—At a recent meeting of the Obstetrical Society of New York, Dr Noeggerath read a paper upon a microbe of puerperal fever, describing at length a case of puerperal fever of a remittent type, which occurred in a patient whose confinement was effected under the most stringent antiseptic precautions. Her surroundings were considered to be favourable in every respect. There was a dressing-closet communicating with the lying-in chamber; in order to eliminate every source of infection, the reader plugged up all the holes in the stationary basin. A few days after her confinement (which was perfectly normal) the patient had a chill, and developed a high temperature, which was controlled by appropriate treatment. There was a foul discharge from the uterus, which ceased after the administration of injections. From the symptoms the reader inferred that the condition in this case was *not septicæmia,* but *sapremia.* The question was, What was its origin? On examining microscopically the lochial discharge and a decomposed clot that had been expelled from the uterine cavity, he found a bacterium with certain very marked characteristics. This appeared as two oblong bodies separated by a constriction. On removing the rubber corks from the overflow-pipe of the basin, and examining the scrapings from their under surfaces, the identical microbes were discovered, a direct relation being thus established between the emanations from the pipes and the sapremic condition of the patient. Now, as the basin had been sealed up before the labour began, and no discharges from the patient, or, in fact, fluids of any kind had been poured into it, the inference was that the bacteria must have been present in the air contained within the pipes long before they entered the genital tract of the puerperal woman. The reader did not pretend to be able to trace the sequence, but he thought that the practical deduction was sufficiently evident, viz., that we ought never to select as a lying-in room any chamber that communicated with a bathroom or dressing-closet, because, although the plumbing might be perfect from the standpoint of the sanitary engineer, this was no security against the presence of dangerous germs.—*Am. Jour. of Obstet.*

VULLIET'S METHOD OF DILATING THE UTERINE CAVITY FOR PURPOSES OF INSPECTION (Betrix, *Nouvelles Archives d'Obst. et de Gynécol.,* January 1886).—The aim of this method is to obtain permanent dilatation of the uterine cavity, thus allowing of the application of treatment under the eye of the gynæcologist. The method is said to be easy, free from danger, but tedious. Dilatation once obtained, however, it persists for weeks, and even for months. The steps of the method are:—The patient should by preference occupy the genu-pectoral position, the perineum elevated by a large Sims. If the cervical canal be not at all patent, a moderate amount of dilatation is obtained by the steel-branched dilator. Small tampons of cotton (iodoformed), to each of which is attached a string, are now pressed beyond the internal os. At the first séance three to four are introduced into the uterine cavity, and are left *in situ* for from twenty-four to forty-eight hours. They are then removed, and replaced by a greater number, the object being to completely fill the uterine cavity at each visit. The uterus shows great tolerance for this tamponade. Beyond a little colic after the first tamponade, Vulliet has seen no untoward result. If it be desired to dilate more rapidly, laminaria tents may be substituted for the cotton. By means of these tampons the cavity of the uterus is gradually distended, and at the end of the treatment the vagina and uterus form a single cavity. Vulliet has used this method in a number of cases of cancer, in three cases of sessile polypi, in two cases of large fibro-myomata, and in one or two cases of endometritis. The time requisite for full dilatation is very variable—in some three days, in others one month.

ON ANTISEPTIC (LOCAL) TREATMENT IN OBSTETRICS (Ehrendorfer, *Archiv f. Gyn.*, XXVII., 2).—To all interested in the results obtainable from the use of antiseptics in obstetrics, this elaborate paper will commend itself, for E. has herein analyzed the methods in use at all the larger clinics, with a statement of the mortality statistics. We reproduce here simply the results from Spaeth's Clinic, where the antiseptic means depended on are carbolic acid and iodoform. The figures from this clinic are analyzed with great care, the history of each septic or otherwise fatal case being given in abstract. We reproduce the figures for each year separately:—In 1882 there were 2898 confinements. Total corrected mortality for clinic 0·51 per cent. Since the puerperal mortality in any clinic will, in a measure, go hand in hand with the abnormalities and complications occurring, we note a few of these: 116 miscarriages; 35 twin labours; 16 face presentations; 59 forceps operations; 23 versions; 3 embryotomies; 2 decapitations; 1 Cæsarean section; 12 craniotomies; 7 placentæ previæ. And further we note that, during this year, 211 students had the privileges of the wards, and were instructed in the touch and in delivery. In 1883 there were 2669 confinements. Mortality, 0·33 per cent. Of complications and interference we note: 54 forceps; 90 extractions pelvic extremity; 24 versions; 21 manual removal of placenta or secundines; 8 craniotomies; 90 miscarriages. During this year there were 381 students in attendance. In 1884 there were 2788 confinements. Mortality (corrected), 0·32 per cent. (including two Porro cases and one Cæsarean section [uterine suture]). The complications, etc., were similarly large, and the students in attendance numbered 324. The figures for puerperal morbidity during these three years were: 1882, 4·31 per cent.; 1883, 3·59 per cent.; 1884, 3·08 per cent. In particular, were the results for 1883 better than those for 1882, seeing that in the former year there were 390 operations against 340 in the latter, and the number of students in attendance was also greater.

ON INTESTINAL DISTURBANCES AFTER ABDOMINAL OPERATIONS (Sebileau, *Annales de Gynécol.*, 1886).—In this paper S. pictures the disturbances from the side of the intestinal canal, which may complicate convalescence from an abdominal operation. Usually after, for instance, an ovariotomy, there occurs vomiting for a variable period, the result of the prolonged anæsthesia, and the effect of the anæsthetic on the stomach, and gaseous eructations, the result of a paresis of the intestinal canal. This paresis, if of short duration, is the cause of no anxiety, simply a source of discomfort to the patient, and this picture may be called the benign type of post-operative intestinal complications. At times, however, the eructations are frequent and of longer duration, as also the nausea and vomiting; the abdomen becomes distended and tympanitic; the patient is only comfortable when under the influence of opium, respiration is impeded, there exists air hunger, the éyes are sunken, the expression tired. Such is the picture of the mean type of intestinal disturbance. Here, frequently, the introduction of an anal catheter, or irrigation of the bowel, or purgation (gentle), by giving free exit to the intestinal gases, will relieve the patient. In certain cases, however, all therapeutic measures fail, the patient grows weaker as the symptoms increase in severity, and towards the tenth day the patient dies. This is the type of intestinal disturbances of the worst possible omen. These three types S. exemplifies by the recital of cases from the service of M. Terrillon at the Salpétrière. At the autopsy of the fatal cases, there may be found simply an injection of peritoneum and the intestines, no pus nor blood in the peritoneal cavity, great gaseous distention of the coils of intestines. Such patients can hardly be said to succumb to simple shock or to peritonitis. Gaseous distention of the intestines is the prime pathological factor—a factor which may sometimes be relieved by the anal sound, and sometimes not. Why, now, such a great quantity of gas in the intestines; and why is not this gas evacuated by the normal passage? No answer can be given to the first question. We simply know that in certain cases, even where no nourishment is introduced into the alimentary canal, a considerable quantity of gas accumulates. The answer to the second question is, that a paresis of the intestines follows on the necessary manipulation of these organs during the operation, whence frequently marked symptoms of intestinal obstruction, or symptoms suggestive of a beginning peritonitis. And yet, in these days of strict antisepsis, a post-operative peritonitis is a rarity. The point to remember is that symptoms of the nature outlined often depend purely on intestinal paresis, and such symptoms may often be speedily relieved by timely recourse to therapeutic measures. These measures consist primarily in the passage of a long rectal catheter; this failing, castor oil in small, frequently repeated doses by the mouth; this failing, the rectal douche; if this fails, croton oil; this failing, galvanism. S. in conclusion sketches the history of a case of intense meteorism, where galvanism was resorted to successfully.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

IODOL.—The penetrating odour of iodoform, and the unpleasant consequences which sometimes result from its employment, to which Treves has recently directed attention, have led to endeavours to find a less objectional substitute. Iodol prepared by Kalle & Co., Bieberich, has the formula C^4I^4NH, is a flesh-coloured, almost tasteless and odourless powder, which is quite permanent if kept in dark-coloured bottles. It is soluble in absolute alcohol in proportion of 1 in 3, in water only 1 in 5000, and its solubility in spirit very rapidly falls on the addition of water. Olive oil heated to the temperature of a water-bath can be made to take up 15 per cent., which does not separate in cooling. Professor Pick, of Prague, has been recently testing the value of iodol, and employs it as a freshly prepared fine powder; as iodol gauze, which possesses no smell, and keeps better than iodoform gauze; as iodol ether, a 10 per cent. to 20 per cent. solution—this can be sprayed on the part, and deposits a fine layer of iodol on the evaporation of the ether; as iodol collodion, in proportion of 1 in 5 or 1 in 10—this is used to cover small wounds after stitching; as iodol ointment, 5 per cent. to 10 per cent., made with lanolin—this can be used to rub over chronic scrofulous glandular tumours, etc. Some of the affections in which iodol was used were—1. *Simple catarrhal and blenorrhagic processes*, such as those attacking the vagina and cervical canal, or of the glands of Bartholin. The application of the iodol ether spray was preceded by cleansing the parts with 1 in 15,000 sublimate solution. In all cases, in a few days the secretion diminished, the erosions healed relatively quickly, and the abscesses of the glands, which had been opened, rapidly filled up without any irritation of the adjoining parts. Micro-organisms, and particularly the gonococcus, could not be found after a few days. In *simple* and *sclerosed ulcers*, after the acute part of the process is past, the healing was favoured by the application of iodol. In *gummata* and *gummous ulcers*, the internal administration of iodol was especially advantageous, and in this respect it far surpassed iodoform, and in many ways was preferable to iodide of potassium. It is well borne by the stomach and intestinal canal, even in doses at first of 30 to 45 grains daily, and does not cause diarrhœa. Poisonous symptoms were not observed, and two persons only complained of transient giddiness. Pick prefers to administer iodine preparations in moderate doses at intervals, and not continuously. Thus in two successive days he gives twice a day from 4 to 7½ grains of the iodine salt, then intermits it till the corresponding days of the following week. The excretion of iodol is more gradual than that of iodide of potassium. Yet, with the above-named interval, the elimination is completed, and one or two days of freedom from iodine are passed before a fresh dose is introduced. From this it follows that iodol is preferable to the iodide in such cases, when a persistent rather than intense effect of iodine is desired. While iodol exerts no specific action on lupus, it forms a better application than iodoform after scraping. Particulars of ninety-three cases treated with iodol are furnished; also some comparative observations as to the rapidity with which iodol and iodide of potassium are relatively excreted. It was found that, with similar doses, traces of iodine could be found five days after cessation of iodol, but only two days after iodide.—*Vierteljahresschrift für Dermatologie und Syphilis,* 4 Heft, 1886.

HISTOLOGY OF LUPUS ERYTHEMATOSUS.—Morison, of Baltimore, has examined sections of skin stained in various ways from a very extensively distributed case of lupus erythematosus in Pick's clinique at Prague. Inflammatory changes were found in the papillary layer of the corium only. These seemed to start from the vessels surrounding the sebaceous and sweat glands, and spread along these as proliferating epithelial cells. Localized necrosis of the corium and papillary layer was present in parts, but nowhere pus formation or caseous degeneration. This necrosis led to gradual destruction of the horny layer and to the formation of cicatrices, so frequently a sequence of this form of lupus. These must be regarded, however, as false scars, since there is neither pus formation nor the production of fibrous tissue. Colonies of cocci were met with in the glands and epithelial strata, but as those are quite commonly encountered, they cannot be held as having any pathogenic significance. No bacilli were seen anywhere. Morison thinks, therefore, that lupus erythematosus has nothing in common with ordinary lupus. There is no great accumulation of wandering cells, no giant cells, and no trace of caseous degeneration. He thinks Hebra was right in naming the disease as seborrhœa congestiva, though, as the sweat glands can also furnish starting-points, the designation was too restrictive. He regards it as a dermatitis which can take its origin from the glands, and proposes the name of dermatitis glandularis erythematosus.—*Viertelj. für Dermatologie und Syphilis,* 4 Heft, 1886.

SCLERODERMA.—Graham relates two somewhat peculiar cases, one acute, since in two weeks the disease had spread from its origin on the back of the neck over nearly the whole body. It gradually disappeared, till in three months it was all but entirely gone. There was no œdema at any time, and but slight local pigmentation. The second case was a chronic one. It began with stiffness in the limbs as though the patient had caught cold. Induration of the skin did not come on till four months later. The hardening spread quite rapidly, and was accompanied with marked pigmentation. There were also pigment spots, which disappeared and were replaced by leucoderma. Graham does not believe that scleroderma can be a purely local disease. The generally accepted opinion is that it is a tropho-neurosis. Yet in most trophic lesions the condition is either permanent or progressive in character, while in scleroderma in many cases recovery takes place sooner or later. In scleroderma there are, doubtless, pathological conditions existing in the deeper organs, which have so far escaped observation. In Graham's opinion it is more nearly allied to the rheumatic affections. He does not mean to deny that there is a close relationship with the tropho-neuroses, since he considers that many rheumatic joint affections are of neurotic origin. This coincides with the views of Duhring and Crocker. Rheumatism, especially that of hereditary character, manifests itself in an infinite variety of ways, and scleroderma may be one of these. In the first case cited, the patient had had acute rheumatism; in the other there was a history of it in the family. This view opens up the question of the value of anti-rheumatic remedies. While he looks on morphœa and scleroderma as being etiologically closely connected, it is of advantage to consider them as two separate diseases till our acquaintance with them is more extensive and accurate.—*Journal of Cutaneous and Venereal Diseases*, November 1886.

BULLOUS ERUPTION DUE TO IODIDE OF POTASSIUM.—Hyde, after relating some cases, formulates the following interrogatories: 1. Are there not three sub-forms of the bullous exanthem developed after ingestion of the iodide in certain individuals? 2. Is not the first and most common of these to be generally recognised in persons of advanced age and cachectic condition, the rash being then exhibited in the form of typical bullæ? 3. Is there a second and still rarer sub-form in which the eruption is displayed in di- or polymorphic manifestation, typically perfect bullæ being then commingled with papules, tubercles, scarlatiniform maculations, or with other and different lesions? 4. Is there not a third and still rarer form, a quasi-bullous rash, to be recognised most often on the face and dorsal aspects of the hands and forearms of infants and children; where the lesions are semi-solid, slightly umbilicated, and filled with sago-grain-like, grumous, inspissated, yellowish, whitish, and darker-coloured contents, which do not collapse after fracture of the encircling wall, but which without distinct outpouring of the contents may shrivel and desiccate to a crust, after suspension of the drug inducing the eruption? 5. Is this last described lesion one to be recognised solely as the result of the ingestion of the iodide of potassium, never under other circumstances, and one as peculiar to the special condition it represents as the gumma is to syphilis?—*Journal of Cutaneous and Venereal Diseases*, December 1886.

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S. Ed.

THE TREATMENT OF CHRONIC SPECIFIC URETHRITIS IN THE MALE.—In the *Albany Medical Annals*, June 1886, Dr O. D. Ball recommends the following application of oxide of zinc ointment in gleet. The formula is as follows:—

℞ Zinci oxidi, . . . ʒiij.
Adipis, ... ʒiij.
Cerati sirup, . . ℥ij. M.

When thus prepared it will adhere nicely to the bougie, and yet be soft enough to apply itself to the urethra. The method of using is as follows:—The constricted portion of the bougie is filled out evenly and as smoothly as possible with the full calibre of the instrument, and, if the parts are sensitive, lubricated with vaseline; if not, the ointment is sufficient. The bougie should be carried down to the prostatic portion of the urethra as rapidly as possible, and then, after rotating it in both directions, slightly withdraw it and push it back again, in the hope that some of the ointment will be forced into the swollen mouths of the seminal and prostatic ducts. The rest of the urethra should be treated in the same way, and the applications made at least twice a day, after micturition.

THE NATURE OF THE CHANCROID.—In the *Polyclinic*, August 1886, Dr Simes contrasts two papers which appeared in the *Annales de Dermatologie et de Syphiligraphie*, September 1885, on this subject. The article by Dr Gémy is entitled, "The Virulence of the Chancrous Bubo," and the following conclusions are arrived at by him:—1st, Simple chancre in a certain number of cases is not complicated with inguinal adenitis. 2nd, When it is accompanied with an adenitis, the adenitis, in the proportion of three-fourths of the cases, is purely inflammatory, and the pus is not virulent. 3rd, In the remaining fourth of the cases, the bubo is produced by the transportation of micro-organisms—contagious agents—through the lymphatics to the first lymphatic gland, which retains them and develops into a chancrous bubo. 4th, In these last cases, two phenomena may occur: where the bubo is chancrous throughout, the periglandular cellular tissue not being affected by the presence of the virus, the pus is immediately inoculable; where the cellular tissue is at the same time inflamed, and it is this pus which first escapes when the bubo is opened, and as it is not yet chancrous, the immediate inoculation gives a negative result, but positive if we wait until this pus has all escaped, in order to obtain the intraglandular pus, or if we at once take the pus from the gland itself.

The other paper is by Dr Laurent Manino, entitled, "New Investigations of the Pathogenesis of Bubo which accompanies the Soft Chancre." His conclusions are as follows:—1st, That the pus from an adenitis which accompanies the simple chancre is not inoculable at the moment it is opened. 2nd, That in certain cases this pus acquires virulent properties, forty-eight hours or three days after the opening of the bubo. 3rd, That there are always found in the pus of a soft chancre many bacilli as well as numerous micrococci formed into chains or scattered. 4th, That in the pus of a bubo, immediately after it is opened, there are never found any bacilli, only micrococci and diplococci are seen. 5th, That in the pus of a soft chancre, when it has become a simple wound, there are not found any bacilli. 6th, When the pus from a bubo is examined after it has become chancrous, there are then found the bacilli of the soft chancre. 7th, When the pus from a bubo that has been opened is procured, either exposed to the air or not, and examined after three or four days, it is always found to be non-virulent. 8th, That the virus of soft chancre loses its virulence when submitted to the more or less prolonged action of a temperature of 95° F. to 104° F. Gémy maintains that the adenitis is the direct result of a virus transmitted through the lymphatic vessels to the lymphatic gland. Manino, on the other hand, holds that the bubo is always non-virulent, and never possesses infecting properties until opened and exposed to contamination by having the secretion of the chancroid brought in contact with it. The question of the virulency of the bubo resolves itself into the nature of the chancroid. The author does not agree with the common belief that the chancroid is a *local specific lesion the result of a specific virus.* In making a comparison between the chancroid and other known specific affections, it is found that there exist, with the latter, certain general laws that give to them, as a whole, peculiar characteristics by which we are justified in classifying them under one head. With the chancroid there is not a distinct period of incubation, such as essentially belongs to the specific diseases. There is protection afforded to those who have contracted any of the specific diseases against again suffering the same affection; there is none with the chancroid. If the chancroid is a specific lesion due to a special virus, the only condition under which it should be developed is when the virus is present; this is not an element in the evolution of the chancroid. Thus, pus taken from a non-specific sore, located on a non-syphilitic person, and inoculated upon a healthy individual, will occasion a sore identical in every respect with the chancroid. The histological appearances are the same whether the ulceration is chancroidal or inflammatory. One of the arguments most frequently brought against the theory of inflammatory products being the source or cause of chancroids, is the fact that if these secretions were capable of occasioning the lesion, it would frequently be a common affection among surgeons and nurses. He does not consider the cases analogous, as extra-genital chancroids are so rare. That there is in most cases a marked distinction between the initial lesion of syphilis and the chancroid is generally admitted. The former is a new formation and not an ulceration, as a chancroid is. The nature of the adenitis which accompanies the chancroid has been, for those who believe in the specificity of this lesion, a most important, and, to them, convincing evidence of the specific element connected with this affection. From the statistics of this complication, it would appear that of 456 cases of chancroid only eleven are characterized by buboes of any virulency. Certainly, if only one case in forty is complicated by a bubo, which may be considered to prove the specific nature of the chancroid, the evidence is not very convincing. The author believes that the character of the adenitis will solely depend on the nature of the inflammatory process at the seat of ulceration—the chancroid. Finally, the method of treatment has been advanced as evidence in favour of the presence of a specific virus in the chancroid. The author believes that the treatment by cauterization, advised by most writers, which by destroying the virus prevents the spread of the ulceration, to be unnecessary. Believing, as he does, that we have a purely inflammatory process to deal with, the indications for treatment are to employ the various medications found useful in this condition. Even cauterization may become necessary, for the same reasons that we use it in other forms of ulceration, but never is it to be employed to destroy what, for him, does not exist, viz., a specific chancroidal virus.

Fluid Extract of Kava Kava in the Treatment of Gonorrhœa.—In the *Medical Record*, May 8, 1886, Dr Rogers recommends strongly the use of this drug. During the past two years he has treated 105 cases of gonorrhœa; of these 34 were in private practice, and 71 at the hospital. Of the 71 cases treated at the hospital, 43 were discharged, in from six to nine weeks, cured; 13 improved, but lost sight of before two weeks had passed; 7 never returned; and in 8 the drug did not seem to have any effect. The longest period that a private patient remained under treatment was thirteen weeks, the shortest period twenty-seven days. The average time of treatment was about nine weeks. In only three cases was there orchitis. About one-fifth suffered from chordee. His usual prescription is from 20 to 30 minims of the fluid extract of kava kava in water, to be repeated every four or five hours.

Tuffier on Gummata and Scleroses of Lips.—In an exhaustive paper these tertiary syphilitic manifestations are described and contrasted, numerous cases are narrated, and the diagnosis, prognosis, and treatment of each fully discussed. In the following table the author epitomizes his views with regard to the two lesions:—

Circumscribed Gummata.	*Syphiloma.*
Seat chiefly in upper lip.	Seat chiefly in lower lip.
Deformity circumscribed and unsymmetrical.	Deformity often completely symmetrical; hypertrophy of whole lip, as in strumous cases.
Nodules; unequal consistence.	No nodules; diffuse infiltration; equal consistence.
Hardness.	Firmer consistence.
A stage of softening.	No softening stage.

Circumscribed Gummata.	*Syphiloma.*
Deep excavated ulceration.	Never deep ulceration; none at first, afterwards pustulo-crustaceous or tubercular syphilides.
Soft pigmented cicatrix, leaving the lip thinned, like commencing labio-laryngeal paralysis.	No cicatrization, but sclerosis and deformity, giving it an irregular shape, with grooves and elevations; lip of fibrous consistence.
Progress in each stage regular.	Progress irregular; time indefinite, but always long.
Treatment rapidly efficacious.	Treatment difficult when sclerosis has begun.
Results not serious to functions of lip unless much be destroyed.	In indurated stage, lip projects and speech is hindered, mastication difficult, saliva overflows from mouth. When lip is sclerosed and inextensible, articulation, mastication, deglutition, are interfered with; saliva dribbles constantly.

—*Revue de Chir.*, Oct. 10, 1886.

SURGICAL PERISCOPE.

By A. G. Miller, F.R.C.S.E.

A Simple Method of Removing Wens.—"In the *North-western Lancet*, July 15, 1886, Dr Lauenstein's simple method of removing sebaceous cysts of the scalp is described. The skin over large wens of the scalp is often so thin that, in the commonly practised method of extirpation with a free incision over the convexity of the tumour, the sac is often ruptured in spite of all care, and through collapse of the walls of the sac the separation of the skin is rendered difficult and protracted in a disagreeable manner. This accident, unless it is a case of inflamed wen, may be avoided with certainty by a simple expedient, which has recommended itself to him on account of the rapidity of its execution, and which will be readily appreciated by those to whom it often happens to be pressed for time, or who, living in the country, are obliged to operate without skilled assistants. After shaving and cleaning the neighbourhood of the wen, he makes a radial cut, about one inch long, through the skin where it is separated from the capsule of the wen, for instance, on the back of the head at the lowest point of the base of the tumour; through this slit he introduces the slender handle of the scalpel used, or a similar instrument, between the skin and sac, more or less deeply according to the size of the tumour. This is very easily accomplished, and he then makes several sweeping movements of the scalpel-handle to the right and left, thereby separating with ease the sac from the skin. The elasticity of the skin allows almost the whole circumference of the wen to be separated in this way in a few seconds. He then cuts, with one snip of the scissors, the skin over the crown of the tumour as far back as is necessary, and shells it out whole from its seat. There is often no bleeding, because of the division of the vessels of the sac by a blunt instrument. The rest of the treatment—sutures, drainage—is not affected by this procedure; nevertheless, he adds that any crushing or tearing of the edges of the wound is completely avoided."—*Medical Record*, August 21, 1886.

Dr Scott Helm of Chicago, writing in the *Journal of the American Medical Association* for 21st August 1886, recommends a SUBCUTANEOUS METHOD OF THE TREATMENT OF BUBOES, WITH EXHIBITION OF THE INJECTING INSTRUMENT. His method consists in injecting the suppurating gland, after the pus is withdrawn, with a solution of carbolic acid to wash out the cavity, and then injecting and allowing to remain an emulsion of iodol in pure oleic acid. The injecting instrument consists of a barrel holding two drachms, which is mounted on either side by two rings for the fore and middle fingers, and a ring in the end of the piston for the thumb. Three needles, two different sizes of aspirator needles, and one a canula with trocar. To these is attached the centre joint, in which is a stopcock, the opposite extremity of which is attached by a smooth joint to the barrel. In twenty-three cases the treatment was successful in all but the nineteenth, this patient having gone on a protracted spree following the operation. The advantages of the operation are that when there are two or more suppurating buboes in the same chain of lymphatics, the second or third appear further away from the initial one; by placing the first glandular abscess in a perfectly aseptic condition you prevent the inflammations of neighbouring glands; secondly, there is no cicatrix remaining.—*Philadelphia Medical Times*, July 1886.

The following conclusions are by Dr H. F. Formad from 143 consecutive post-mortem examinations:—1. Hæmorrhages exclusively above the pia mater and above the dura mater—*i.e.*, on the outside of the brain—are always due to traumatism or to sunstroke, provided a cerebral source for hæmorrhage is excluded, and the cerebral vessels and membranes were not diseased. 2. Hæmorrhage in the floor of the fourth ventricle is always traumatic, provided there are no accompanying blood-clots in the lateral ventricles or any other part of the cerebral substance. If, however, the brain-substance is very *anæmic* (in the absence of a massive hæmorrhage), then a ventricular ecchymosis may indicate that death ensued from epileptiform convulsions (idiopathic). 3. Hæmorrhage exclusively below the pia mater or in any part of the brain-substance or into the ventricles (except the fourth) is always idiopathic—*i.e.*, is due to disease. 4. There must be a diseased condition of the cerebral vessels or substance in order to exclude violent causes and to ascribe a hæmorrhage to disease. There must be traumatism (a fall or violence) in order to account for a hæmorrhage in a normal brain. 5. The blood-clot in concussion of the brain is not found at the point of application of violence, but always somewhere about the opposite side of the brain, and always within the cavity of the arachnoid—*i.e.*, between the pia and dura mater. 6. The blood-clot in fracture of the skull is always found at the point of application of violence, immediately below and always between the dura mater and the fractured part of the skull itself. In rapidly fatal cases there may be a second, an intra-dural, clot in some other part of the brain, due to the effects of concussion. 7. A blood-clot formed within the cranial vault is more favourable to the patient if due to fractured skull than if due to a mere concussion. 8. Only clotted blood and infiltration of blood-corpuscles into tissues indicate an ante-mortem hæmorrhage; liquid blood is due to post-mortem oozing, and only stains, but does not infiltrate, tissues. In cases, however, where rapid asphyxiation or certain poisons co-operate with the traumatic injury in causing speedy death, the blood may remain liquid, and clots may fail to form. 9. Severe bruises and cuts of the scalp may be seen in cases of idiopathic apoplexy where a sudden cerebral hæmorrhage causes a person to fall. 10. In some cases it is impossible to decide by medical examination alone as to whether a head injury and the resulting hæmorrhage is due to a fall or to violence. 11. External marks of violence may be invisible to the unaided eye in some cases of injury of the head or other parts, but are easily detected and also distinguished from post-mortem spots by means of the microscope. 12. The bulk of an intracranial hæmorrhage stands usually in inverse proportion to that of the external scalp-hæmorrhage; but it stands in direct proportion to the duration or the time that has elapsed from the moment of injury to death.—*Philadelphia Medical Times.*

DIAGNOSIS OF EARLY SYPHILIS.—Dr F. N. Otis, in the first number of the *New York Medical Monthly*, writing on the above subject, says, "Sores which indurate even slightly *after healing* are, as a rule, syphilitic." "Recent painless gland enlargements are almost certainly due to a syphilitic infection." "If the lesion is a papule from its first discovery, or an erosion situated on a papule —insensitive, sluggish, persistent, ... and if, in addition, the lymphatic glands in connexion with it become enlarged, there is no reasonable doubt." Dr Otis adds, "A well-grounded *suspicion* of the syphilitic origin of any lesion should be a bar to marriage for at least three years, or to the resumption of marital relations for a period of at least six months." In a second paper Dr Otis says, "Grave forms of the sequelæ of syphilis are often found to have resulted from initial lesions which were so slight as to have been considered doubtful, and where the manifestations of the active or so-called secondary stage of the disease were so insignificant as to have escaped recognition. In view of these important facts, it then becomes desirable to give full weight to every circumstance and condition bearing upon the possible syphilitic origin of a presenting lesion. . . . The advisability of delaying the systematic treatment . . . . cannot, it seems to me, be reasonably admitted." In considering the question of treatment, Dr Otis argues that at first the disease must be local, because due to organisms which form a lodgement and set up an irritation at one point. "If then" (he says), "we can conclude that the evidences are in favour of a local initial lesion, the direct result of a purely local process . . . . we shall be in a far better position to estimate the value of any proposed measures addressed to the arrest, modification, and cure of syphilis."

SUTURE OF ULNAR NERVE TEN WEEKS AFTER INJURY, by Dr Shepherd of Montreal.—An incision was made in the line of the ulnar nerve and across the scar, and the nerve was soon reached. The upper end was bulbous, and lower atrophied; both were embedded in scar tissue. The ends were separated by an interval of half an inch. After dissecting out the nerve the divided ends were "freshened" and brought together by a continuous suture of fine catgut, and the wound closed and dressed with dry antiseptic dressing. Next day the man had fairly good sensation in his little and ring finger, and a tingling feeling as if the nerve were asleep. The wound was first dressed on the sixth day and drainage tube removed; by July 8th the wound was firmly united, and patient was sent home. Sensation, both general heat and tactile, was good, but motion was deficient.—*Philadelphia Medical News*, 18th December 1886.

SUTURE OF SCIATIC NERVE EIGHTEEN MONTHS AFTER DIVISION, by Dr Roddick of Montreal.—The operation was followed by the gradual return of sensation and motion to the foot, and rapid healing of two large and troublesome ulcers on the outer border of the foot. The operation was performed May 1884. The age of patient was twenty-six. At present he could walk without a stick. The interesting feature in this case was the rapid healing of the ulcers after the union of the nerve, showing that the nerves of nutrition had first resumed their functions, although sensation and motion were still in abeyance.—*Philadelphia Medical News*, 18th December 1886.

TRAUMATIC DISLOCATION OF RIGHT ILIUM AT SYMPHYSIS PUBIS AND AT SACRO-ILIAC JOINT.—The accident happened to a healthy young man, aged 21. A heavy log fell upon him while he was on the ground. The ilium was struck without injury to other parts. On admission to the hospital there was a marked projection at the sacrum, but nothing could be felt wrong elsewhere, so that at first the case was taken for one of dislocation of the sacro-iliac joint, possibly complicated with fracture of the pubes. Although the most careful examinations were made, with and without chloroform, the anterior dislocation was not recognised until the eighth morning, when the anterior and upward displacement of the right pubis at the symphysis was unmistakably present. The treatment adopted when the lesion was recognised was to apply a supporting bandage round the pelvis. At first the legs were flexed upon the thighs, and the thighs upon the abdomen; afterwards extension was applied. To avoid stiffness, every fifteen days the thighs were flexed for twenty-four hours. Apparatus was removed at the end of three months. Three weeks after that the patient returned to his work cured. There was no stiffness in his joints, and he walked without any limp. The author refers to published cases of the same dislocation, and concludes that, where there is no simultaneous injury to abdominal viscera, dislocation of the ilium is less serious than fracture of the femur, which is generally followed by shortening.—*Revue de Chir.*, October 1886.

Part Fifth.

MEDICAL NEWS.

List of Candidates who were successful for appointments as Surgeons in the Medical Staff of Her Majesty's Army at the Competitive Examination, held in London on the 14th and following days of February 1887.

Order of Merit.	Name.	Marks.	Order of Merit.	Name.	Marks.
1.	Smith, H. E. H.,	3390	14.	Paterson, J.,	2815
2.	Alexander, G. F.,	3290	15.	Trask, J. E.,	2800
3.	Gore-Graham, W. P.,	3210	16.	Forbes, N. H.,	2785
4.	Woods, E. M.,	3195	17.	Freeman, E. C.,	2755
5.	Spong, C. S.,	3140	18.	Davoren, V. H. W.,	2730
6.	Leishman, W. B.,	3125	19.	Copeland, R. J.,	2720
7.	Rawnsley, G. T.,	3060	20.	Blenkinsop, A. P.,	2670
8.	Thomson, J.,	3040	21.	Borrodaile, A. L.,	2640
9.	Reilly, C. W.,	2990	22.	Halloran, W.,	2640
10.	Crofton, W. J.,	2895	23.	Birt, T.,	2630
11.	Wright, A.,	2880	24.	Peeke, H. S.,	2630
12.	Luther, A. J.,	2850	25.	Smyth, R. H.,	2630
13.	Girvin, J.,	2820			

Liq. Podophyllin (Hockin).—Prepared only by Hockin, Wilson, & Co., London. This is an excellent preparation, containing two grains of podophyllin in every fluid ounce, and one which we can recommend to the notice of the profession.

Compound Syrup of the Hypophosphites.—Lorimer & Co., London and New York. This preparation contains the hypophosphites of lime, sodium, potassium, iron, manganese, quinine, and strychnine. Each fluid drachm contains $\frac{1}{100}$ grain of strychnine. This is a preparation easily administered, and one which we can confidently recommend. It is an alkaline solution, and is well suited for delicate stomachs.

EXTRACT CINCHONA LIQUID. (De Vry).—*British Pharmacopœia*, 1885. Prepared in vacuo. Manufactured by Fletcher, Fletcher, & Stevenson, London. This is a well-prepared extract of a most valuable drug.

OBITUARY.

WILLIAM JACKSON KENNEDY.

WILLIAM JACKSON KENNEDY, M.D., Kirkcaldy, died with startling suddenness on the 8th ult., of perforation of the duodenum. In the beginning of December he had a fall from a gig, and, although at the time he appeared quickly to recover from its effects, it is probable that the accident has been telling on his constitution ever since. He was a native of Ulster, where he was born in 1843; but he studied at Glasgow and Edinburgh. He settled first at Sanquhar, from which in 1879 he removed to Penicuik, and in 1883 he settled in Kirkcaldy. His practice was very large, and he devoted himself to it with enthusiasm, winning, in an unusual degree, the affection of his patients and the esteem of the whole community. Though in his last years he was too busy to spare time for work outside his profession, he was naturally of a public spirit, and, in the years when he had leisure at his command, took an active part in the affairs of both church and state. At Sanquhar he acted for some time as provost of the burgh; and he was an elder of the Free Church.

DR HADDEN OF FALKIRK.

DR JAMES HADDEN, who died at Falkirk on 21st March 1887, was the son of a well-known bookseller in Glasgow, whose place of business was opposite the old College. Dr Hadden took the M.D. Glasgow and the license of the Glasgow Faculty in 1854, and was 57 years of age. He succeeded Dr Tennant in Falkirk many years ago, and since the death of Dr Espie held the post of Parochial Surgeon. He had been in failing health for more than a year, from a complication of disorders—heart, liver, and kidneys, ending in dropsy—and the fatal issue was somewhat sudden, as he had improved for a time during a recent stay at Rothesay. He was twice married, and leaves a widow and eleven children.

PROFESSOR FERDINAND V. ARLT, OF VIENNA.

BY the death of Professor Ferdinand v. Arlt, of Vienna, a great loss has been sustained by all interested in ophthalmology. For forty years—since the time when he first became Professor in Prague—he had enjoyed an European reputation. Those who have studied his writings, and who have had an opportunity of listening to his clinics, and of observing his skill and judgment as an operator, must admit that this reputation was well deserved.

The rapid strides which ophthalmology made, both in its scientific and practical aspects, after the discovery of the ophthalmoscope, and at a period, too, when Arlt had already distinguished himself as the foremost representative of this branch of surgery, did not leave him behind the times, though the attention of ophthalmologists was for a time diverted to Von Græfe in Berlin, and naturally centered round that brilliant pioneer. Von Græfe's genius was his own, but he received much of his enthusiasm and thoroughness from Arlt, under whom he studied at Prague. Arlt was therefore able to appreciate the advances made by his most distinguished pupil, and it was not long before they became associated together, along with Donders, in the editing of the *Archiv für Ophthalmologie*, which to this day is the most important ophthalmological publication, and every number of which brought with it, for many years after its foundation, a record of the most interesting discoveries.

Though in every sense a practical man, Arlt was by no means an empiric; he retained to the last his early enthusiasm for the science as well as the practice of his profession, and no one, perhaps, was better able to form a proper estimate of the value of scientific investigations in ophthalmology. His vast clinical experience enabled him to see more clearly than most could do the bearing of pathological anatomy and experiment on the etiology and treatment of disease, and this, combined with rare judgment and operative skill, was the secret of his success as a practical oculist. Many of his pupils, as, for instance, Professors Becker, Sattler, and Fuchs, have taken their place in the first rank of ophthalmologists; and others, as Wecker and Michel, are well known by their writings. Arlt's great work on the eye was published in parts from 1851 to 1856. He contributed the chapter on operations to the well-known handbook of Græfe-Sæmisch, a chapter which in Germany is with good reason regarded as classical. His last important work was a monograph on Glaucoma, published in 1884, in which all the hypotheses which have been advanced to account for that disease are discussed with admirable insight and fairness. It is not often that the writer of a monograph is able to bring forty years' experience to the consideration of the subject on which it treats, and it need hardly be said that no other work on this subject will better repay a careful study.

Arlt was born at Ober-Graupen, in the Bohemian Harz Mountains, in 1812. He studied ophthalmology at Prague under Fischer, a pupil of Beer. In 1847 he was elected to the Chair of Ophthalmology there, and in 1855 was transferred to Vienna, where he remained until his death, which took place from gangrene on March the 7th.

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Part First.

ORIGINAL COMMUNICATIONS.

I.—ON THE FORMS OF ALBUMEN MET WITH IN THE URINE, AND THEIR TESTS, QUALITATIVE AND QUANTITATIVE. A LECTURE DELIVERED IN THE UNIVERSITY OF EDINBURGH.

By T. GRAINGER STEWART, M.D., F.R.C.P., Professor of the Practice of Physic, Physician in Ordinary to the Queen for Scotland.

GENTLEMEN,—In commencing a series of lectures on albuminuria as a symptom, it is necessary first to go over some ground familiar to many of you, for I must indicate the various albuminous substances met with in the urine. I purpose in the present lecture to enumerate these, and briefly describe the source and nature of each, and then discuss the value of the different tests by which they may be discovered. In doing so I shall give you the results of a careful and prolonged inquiry which, along with Dr Stevens, I have made as to the comparative delicacy of the leading tests for serum albumen, and as to the value of the different methods of quantitative analysis by which the amount of albumen may be determined.

The forms of albumen met with in the urine are:—

I. *Serum Albumen,* a substance which, according to Hammarsten, constitutes 4·516 per cent. of the blood serum. It is almost constantly present in urine which contains any variety of albumen. Although a less diffusible body than serum globulin, it is capable of passing through membrane.

II. *Serum Globulin or Paraglobulin,* the globulin of the blood serum, of which it constitutes 3·103 per cent. It is met with in almost all albuminous urines, its proportion to the serum albumen varying in different instances.

III. *Peptone,* a product of gastric and pancreatic digestion of albuminous substances, also occurring in the process of transformation of tissues and of inflammatory effusions. It is a readily diffusible substance, occasionally met with in the urine in association with or apart from serum albumen.

IV. *Propeptone, Parapeptone, or Hemialbumose,* a substance or group of substances intermediate between albumen and peptone, constituting a stage or stages of transformation from the one to the other. It is highly diffusible, and is occasionally met with in the urine under conditions corresponding to those under which peptone occurs. This is the peculiar form of albumen which was discovered in the urine by Dr Bence Jones in a case of osteomalacia.

V. *Acid Albumen or Syntonin*, one of the derived proteids obtained by the action of acids upon albumen. It is easily produced artificially by the addition of acid to albuminous urine, but may occur naturally in certain cases.

VI. *Alkali Albumen*, another derived proteid, produced by the action of alkalies upon albumen. It is readily produced artificially, but is also found naturally in the urine.

VII. *Hæmoglobin*, the combination of hæmatin and globulin naturally existing in the red corpuscles of the blood. It sometimes appears in the urine, particularly in cases of hæmaturia and hæmoglobinuria, also in certain septic conditions, and after inhalation of arseniuretted hydrogen, transfusion of blood, and otherwise.

VIII. *Fibrin*, a proteid substance which does not normally exist as such in the blood. It is met with in the urine in hæmaturia, in some cases of chyluria, and in certain varieties of renal casts.

IX. *Mucin*, the chief constituent of mucus, is a derived proteid substance. It frequently becomes superadded to the urine after secretion, and may be derived from any part of the urinary tract.

X. *Lardacein, Waxy or Amyloid Material*, familiarly known as a pathological substance within the body, is said to be occasionally demonstrable in renal casts.

Of these ten varieties the last four are evidently of little practical importance—mucin alone being indeed worthy of special comment, and that mainly because of the difficulties which its presence raises in regard to the reliability of certain tests for serum albumen.

As to the composition of the various albuminous substances, it is scarcely necessary that I should say anything, but I may quote the statement of Hoppe-Seyler, that their percentage composition varies from C 51·5 H 6·9 N 15·2 S 0.3 O 20·9 to

C 54·5 H 7·3 N 17·0 S 2·0 O 23·5

The Tests for the Albumens.—I have put in tabular form the chief tests for the different varieties of albumen, with their actions upon each variety.

The oldest test for albumen depends upon *its coagulability by heat*. Heat coagulates the serum albumen (opalescence occurring at 60° C., coagulation at 72° to 75°), and also the serum globulin (opalescence occurring at 68° C., coagulation at 75°); has no effect upon the peptones, propeptones, nor upon acid or alkali albumen, unless an alkali or acid has first been added. It, however, produces cloudiness with phosphates, by driving off carbonic acid, which holds them in solution, and the further addition of nitric acid, by redissolving them, clears up the opacity. A preliminary acidulation with acetic or nitric acid prevents this cloudiness, but may convert albumen into acid albumen, and so make the test fail. But on the whole, if cautiously employed, heat will be found a good test. A further security may be obtained by using both acetic acid and a concentrated solution of magnesium sulphate, or of sodic sulphate, or of common salt, for these prevent the undue action of the acid upon the albumen.

TABLE I.—*Showing Tests for the Chief Forms of Albumen.*

	Serum Albumen.	Serum Globulin.	Peptones.	Propeptones.	Acid Albumen.	Alkali Albumen.
Heat. Heat with HNO_3. Heat with A.	Opacity.	Opacity.	0	0	0	0 Opacity.
Cold, HNO_3.	Opacity.	Opacity.	0	Opacity dissolved by heat.	Opacity.	Opacity.
Metaphosphoric acid.	Opacity.	Opacity.	Opacity diminished or dissolved by heat.	Opacity diminished or dissolved by heat.	0	Opacity.
Acidulated brine.	Opacity.	Opacity.	Opacity diminished or dissolved by heat.	Opacity diminished or dissolved by heat.	Opacity.	Opacity.
Picric acid.	Opacity.	Opacity.	Opacity dissolved by heat.	Opacity dissolved by heat.	Opacity.	Opacity.
Potassio-mercuric-iodide.	Opacity.	Opacity.	Opacity dissolved by heat.	Opacity dissolved by heat.	Opacity.	Opacity.
Potassium ferrocyanide.	Opacity.	Opacity.	0	Opacity dissolved by heat.	Opacity.	Opacity.
Dilution with water.	0	Slight opacity.	0	0	0	0
Magnesium sulphate.	0	Opacity.	0	0	Opacity.	Opacity.
Fehling's solution.	Brownish-red or mauve.	...	Rose pink or purple.	Rose pink or purple.		
Randolph's test.	...	...	Yellow opacity.	Yellow opacity.		

The *Cold Nitric Acid Test* ranks next in date of introduction and in general popularity to that by heat. When a layer of nitric acid is brought into contact with a layer of urine, a white coagulum is formed at the line of junction of the fluids. The acid coagulates serum albumen, serum globulin; has no effect upon peptones; gives an opacity with propeptones, which, however, disappears with heat; has no effect upon acid albumen, but gives distinct reaction with alkali albumen. One or two sources of fallacy must be kept in view when one employs this test. It may give a precipitate with urates, with urea, or with resinous substances. Such fallacies may be avoided by the adoption of very simple precautions, which are fully detailed in the books on urinary analysis.

Metaphosphoric Acid is an excellent test for albumen, but as it is only serviceable when pure, and difficult to keep in that condition, it has not come into general use.

Acidulated Brine is also a test of considerable value, acting upon all varieties of albumen, but it is not likely to become greatly trusted, because of its frequently giving some reactions with normal urine.

Picric Acid is a test which has been brought into use in this country mainly by the recommendation of Dr George Johnson. It produces an opacity with all the forms of albumen; but while those with serum albumen, serum globulin, acid and alkali albumen persist or become more distinct with heat, those with peptone and propeptone dissolve. It must be remembered, also, that alkaloids, such as quinine, give a cloud with this reagent, but one which rapidly disappears with heating. On the whole, I believe this to be the most reliable and delicate test which we at present possess.

It has been objected to the test, that it precipitates mucin as well as serum albumen, and that this is a source of fallacy, particularly when it is used by the contact method. As this question appears to me important, I have taken a good deal of pains to satisfy myself regarding it. By the kind permission of Dr Sinclair, I examined, along with Dr Stevens and Mr Boddie, the urine of a number of inmates of Craiglockhart Poorhouse, in whom previous examination had shown that minute traces of albumen were frequently present, and in which, as in most urines, mucin was also to be found. My object was to see how far the actions of the characteristic tests for mucin corresponded to, and how far they differed from those of picric acid. The specimens, fifty-four in number, derived from twenty-seven individuals, were tested with nitric acid, picric acid, a solution of citric acid of specific gravity 1005, and the solution of citric and picric acids together used in Esbach's method for determining the quantity of albumen. The contact method was adopted in all cases as being the most delicate. The nitric acid was used in order to show when albumen was present in considerable quantity; the picric acid to show the minute traces of albumen, and with the special view of watching for reaction with mucin; the citric acid as the best test for mucin; and the combined citric and picric for the purpose of comparison with the reactions obtained with the other tests. Of the fifty-four specimens, twelve showed a reaction with nitric acid, thirty-four with picric, thirty-eight with citric, and forty-one with Esbach's combined solution. The most important fact for our purpose elicited was that, while a large number of the specimens gave distinct reactions both with picric and citric acids, there were three which gave an opalescence with picric and not with citric, and seven of those which reacted with citric acid gave no reaction with picric. From these facts we conclude that mucin may be demonstrated by citric acid when no reaction is produced with picric, and that picric may show minute quantities of albumen in urines in which citric acid fails to show mucin.

But, on the other hand, picric acid often produces an opalescence in urine apparently free from albumen, and Dr Stevens made a series of careful experiments with the view of getting at an explanation of this fact. He selected a urine which gave a faint and slowly developed reaction with picric acid, and a distinct opacity with citric acid. Having coagulated its mucin by means of citric acid and filtered off the coagulum, he found that the urine no longer gave any reaction with picric acid. Again to another specimen of the same urine he added picric acid and then filtered off the precipitate; he found that the urine then gave either no reaction, or a very slight one, with citric acid. These experiments seem to indicate that picric acid does act upon mucin, although more slowly and less distinctly than does citric acid. I suspect that the degree of acidity of the urine is an important element in relation to this reaction with picric acid; that where acid is present in quantity the opalescence is distinct, where it is in slight amount it is comparatively or completely absent.

On the whole, we seem to be warranted in believing that although picric acid often affects mucin, it does not do so in such a way as to render it unreliable as a delicate test for albumen. Its precipitate with mucin is, even when applied by the contact method, a slight, slowly developed haze. A precipitate indicating albumen is more marked and more quickly produced. A little practice in the use of the test will soon render you familiar with the degree and rate of formation of the opacity which indicates albumen as distinguished from those which mark the presence of mucin.

Potassio-Mercuric-Iodide, which was first proposed as a test by M. Tanret, corresponds in its action to picric acid, giving opacity with serum albumen, globulin, acid and alkali albumen, and an opacity dissolved by heat with peptone and propeptone. But it will be found to give a reaction with a very large proportion of normal urines, and as the addition of an organic acid—citric or acetic—is required to bring out the reaction, it is clear that mucin must, in many cases, give a degree of opalescence. It may be that other sources of fallacy exist in regard to those slighter reactions. It is true that Dr Oliver's method of applying this test greatly reduces the chances of error, but its disadvantages render it, in my opinion, an inferior test to the picric acid.

Potassium Ferrocyanide, first suggested by Dr Pavy, also resembles picric acid in its action, except that it does not give any indication with peptones. I find that the objections which induce me to reject the reagent last described apply to this one also.

Dilution with Water is a convenient but not very reliable test of the presence of serum globulin, as it produces a milkiness, that substance being soluble in weak saline solutions, but not in pure water or extremely diluted solutions of salts. It produces no effect upon other forms of albumen.

Magnesium Sulphate is a valuable test for serum globulin, as it produces a milky opacity with that substance, which speedily deposits as a precipitate. It has no action upon serum albumen, peptone or propeptone, but produces an opacity with acid and alkali albumen. It is best used in saturated solution by the contact method. By its use also, according to methods described in works dealing with the subject of physiological chemistry, the globulin may be separated nearly pure, and its amount determined.

Fehling's Solution, or other alkaline solution of copper, is a most convenient test for peptone and propeptone, giving with these a rose pink or purple colour at the point of contact of the test with the supernatant urine, and producing no effect upon the others, with the exception of serum albumen, with which it gives a brownish-red hue.

Randolph's Test for peptone and propeptone, which consists in the addition of one drop of saturated solution of iodide of potassium and then of two drops of Millon's reagent (an acid solution of nitrate of mercury) to a drachm of urine, gives a yellow instead of a red precipitate when these substances are present; but, as Dr Oliver has pointed out, it gives the same colour reaction with bile salts, which are frequently present in considerable amount in the urine. Therefore we cannot esteem it so highly as the copper and alkali test.

Although you are probably familiar with the general outline of the facts I have thus brought before you, I have thought it well to draw them up in a tabular form, and to make these comments upon them. I shall only add, that the presence of hæmoglobin may be made out by the guaiac reaction or by the spectroscope; that the presence of fibrin may be ascertained by its decomposing with effervescence hydrogen peroxide; that mucin may be discovered by means of citric or acetic acid; and that waxy material may be shown (if it is ever present) by iodine, iodine and sulphuric acid, or by methyl-aniline violet.

I shall now show you the results of the investigation which we made last summer into the question of the comparative delicacy of the chief tests for serum albumen. The method which we adopted was to take an albuminous urine, determine its proportion of albumen by Esbach's tubes, dilute it with normal urine more and more, and note the point at which each test failed to give its characteristic reaction. I wish you to observe that we employed normal urine as our diluting fluid, as we found that the substitution of water brought out a misleading result. Indeed, I was led into error by this circumstance in a series of observations which I made a number of years ago—cold nitric acid giving a much better result than it would have done with the closer imitation of nature.

In Table II. I show you the results. In parallel columns I have represented the effects of each of the tests: showing in the first the dilution up to which the action of each reagent remained distinct, in the second the percentage of albumen as calculated from the total quantity in the undiluted fluid and the number of dilutions, and in the third the grains or part of a grain per ounce as calculated from the same data.

TABLE II.—*Showing the Comparative Delicacy of Tests for Serum Albumen.*

Tests.	Dilutions.	Percentage.	Grains per Ounce.
Boiling.	300	0·0005	0·00218
Acidulation with acetic acid, and boiling.	500	0·0003	0·001311
Cold nitric acid.	50	0·003	0·01311
Metaphosphoric acid.	500	0·0003	0·001311
Picric acid.	1000	0·00015	0·000655
Potassio mercuric iodide. (Test papers).	500	0·0003	0·001311
Ferrocyanide of potassium.	500	0·0003	0·001311

The urine with which we worked contained albumen to the amount of 1·5 grammes per litre, which is equal to 0·15 per cent., or 0·655 of a grain per ounce.

Our results show that the *boiling test*, carefully applied, is an excellent one, revealing the presence of so little as 0·00218 of a grain per ounce, and continuing to show up to the 300th dilution of our standard specimen. But heat, with preliminary acidification with a little acetic acid, was still more delicate, showing 0·001311 of a grain per ounce, and giving a perceptible haziness up to 500 dilutions.

The *Cold Nitric Acid Test* falls far short of this in delicacy, for we found that it does not give distinct reaction beyond the 50th dilution, and therefore shows only with 0·01311 of a grain per ounce. It is true that if the specimen is allowed to stand, the reaction may gradually manifest itself, with minute traces of albumen; but this is inconvenient, and for practical use tests are to be estimated in proportion to their rapidity of action.

Metaphosphoric Acid gave the same results as heating after acidulation with acetic acid, viz., showing till the 500th dilution of our standard urine, and 0·001311 of a grain per ounce.

Picric Acid proved the most delicate test, giving a faint but perceptible reaction up to the 1000th dilution of our standard specimen, which is equal to 0·00015 per cent., or 0·000655 of a grain per ounce.

The *Potassio-mercuric Iodide* and the *Ferrocyanide of Potassium Tests* gave the same results as metaphosphoric acid, showing albumen up to the 500th dilution of our standard specimen, equal to 0·001311 of a grain per ounce.

From these and other observations I am led to conclude that picric acid is the most delicate of all the reagents which we possess for albumen, and that next to it rank the potassio-mercuric iodide, the heating after acidulation with acetic acid, the ferrocyanide of potassium, and the metaphosphoric acid. Boiling and adding nitric acid is less delicate, and still less so is the cold nitric acid test.

But delicacy is not the only quality required of a test. Indeed, a test may be too delicate for practical purposes. And again tests otherwise suitable may be practically inconvenient. Nitric acid is difficult to carry about, and picric acid presents a similar disadvantage, although in a minor degree. The test pellets devised by Dr Pavy of London, and the test papers of Dr Oliver of Harrogate, are extremely convenient, being easily carried about, and very delicate. But it may be held that they are too delicate, for few urines fail to show some reaction with them. Indeed, you will find that many of them, as I have told you (and the same is true of tungstate of soda), show some reaction with practically normal urines. The smallest quantity of mucin may suffice to produce the reaction, or a quite infinitesimal trace of albumen proper. Therefore I should advise you to learn to use the tests with discrimination, and not to attach much importance to their fainter indications, and always remember that albuminuria is rarely a serious condition unless it is sufficiently pronounced to be made out by the cold nitric acid test.

The last point to which I shall direct your attention to-day is the results we have obtained by a series of experiments comparing the methods most used for determining the quantity of albumen in any given sample of urine. A rough plan often adopted is to boil, then add a little nitric acid, set the test tube aside for twenty-four hours, and then note the proportion of the coagulum to whole height of the column. This may be useful in determining the progress of a case day by day, but is of no scientific value. We have carefully compared the results obtained in this way with the ingenious plan suggested by Dr Oliver for bringing out the result without waiting the twenty-four hours. This is known as Dr Oliver's fractional method. He uses a graduated tube, a paper ruled with dark lines, and his mercuric iodide or potassium ferrocyanide test papers. The graduation on the tube is so marked as to correspond with the fractions of a column in an ordinary test tube. The test papers are put into the tube along with 60 minims of water, and urine added until it is no longer possible (on account of the increasing opacity of the fluid) to make out the lines behind; the mark reached by the urine is intended to correspond to the fraction which would have settled at the end of twenty-four hours. Now we found that Dr Oliver has hit this very correctly, for when our coagula stood in the test tubes at one-fourth to one-third, we found that we got by Dr Oliver's fractional method an almost identical result. But this is only of service for comparison of the progress of a case day by day, and in good clinical work we have to aim at something more definite.

Various plans have been suggested for giving more accurate results. Those which we tested were drying and weighing, and the methods of Esbach, Roberts, and Oliver. I have stated the results obtained in Table III.

TABLE III.—*Showing the Results obtained by different Methods for Quantitative Analysis of Albumen.*

		Grains per Ounce.
I. Drying and weighing.	3·84207 grains in 100 cc.	1·0911
II. Esbach's method.	2·5 grammes per litre ; 0·25 per cent.	1·08375
III. Roberts' method.	175 degrees.	2·5
IV. Oliver's percentage method.	0·64 per cent.	2·8

I. *The Separation of the Albumen, Drying and Weighing it.*—This, which is the fundamental and best method for ascertaining the amount of albumen, is somewhat difficult, and requires considerable time for its performance. It is much too laborious to be freely used as a clinical method. One has to acidulate the urine slightly with acetic acid, then place it in a water bath at a temperature of 100° C., stirring frequently, so as to prevent the formation of bulky clots. The coagulated albumen is then allowed to settle, carefully separated from the fluid, and placed upon a filter previously weighed. It is then put into a hot air bath and slowly dried. After cooling it is weighed; then again put into the hot air bath, and the process repeated until it ceases to lose weight. Thereby the amount of albumen is accurately determined. In the urine which we used we found 3·84207 grains in the cubic centimetre, equivalent to 1·0911 grains per ounce.

II. *Esbach's Method.*—This plan requires certain special tubes, graduated so as to show the height to which the urine to be tested, and that to which the reagent (a solution of picric and citric acids) should reach, also the number or proportion of grammes per litre. The urine is filled up to the level indicated by the letter U, then the test fluid to the line marked R, and the fluids, having been thoroughly mixed, are set aside to stand for twenty-four hours. At the end of that time the level reached by the coagulum enables us to read off the grammes per litre. Our observations brought out a result, as is seen in the table, of 2·5 grammes per litre, which is equivalent to 0·25 per cent., or 1·0837 grains per ounce. It thus very closely corresponded to the results obtained by the first method.

III. *Sir William Roberts's Dilution Method.*—In this plan nitric acid is used by the contact method. The urine is diluted with water until it is found that the opacity begins to appear between thirty and forty-five seconds after the fluids have come together. Each dilution, with an equal quantity of water, represents what he terms one degree of albumen, and he finds that each degree corresponds to 0·0034 per cent., or 0·0148 of a grain per ounce. By this method we found 175 degrees, which corresponds to 2·5 grains per ounce. Careful repetitions of the experiment confirmed this result.

IV. *Dr Oliver's Percentage Method.*—This method consists essentially in coagulating the albumen in urine by the mercuric iodide, or the ferrocyanide of potassium test papers, until it reaches an opacity exactly corresponding to a standard fluid enclosed in a tube. Both tubes are flattened, and are held in front of a white card ruled with black lines, and it is easy to decide when the lines are seen with equal indistinctness through the two tubes. The standard fluid is arranged so as to correspond to the opacity produced by 0·1 per cent. of albumen when precipitated by the mercury or the ferrocyanic test papers. Fifty minims of the urine (simple or diluted) are put in the flattened test tube, reagent papers are dropped in, and the contents are shaken up. The card is then placed behind the two tubes, and their opacities are compared. If the urine being tested is more opaque, water is added until the opacity of the standard is reached. The percentage of albumen is calculated by multiplying 0·1 by the number of times the volume of the urine (50 minims) has been increased by dilution. On applying this method to the urine which we investigated, we found 0·64 per cent. of albumen, which corresponds to 2·8 grains per ounce.

From our observations, it appears that Esbach's method brings out results closely corresponding to those obtained by the elaborate drying and weighing process, and I am glad to know that Dr George Johnson's observations have led him to the same conclusion. As the method is easily worked, as well as so reliable, it is certainly the one which I advise you to adopt, and make yourselves familiar with. Its only disadvantages are that one must wait twenty-four hours before the result can be obtained, and that it does not enable us to measure less than 0·5 grammes per litre. The methods of Roberts and Oliver have given, in our hands, results closely corresponding to one another, but considerably different from the others; and although they give their results at once, I cannot so heartily commend them to you.

II.—ON THE INDICATIONS FOR AND METHOD OF WASHING OUT THE PUERPERAL UTERUS.

By J. Halliday Croom, M.D., F.R.C.P.E., F.R.S.E., President, Obstetrical Society; Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary; Physician, Royal Maternity Hospital; Examiner in Midwifery, University; and Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 9th March* 1887.)

Introduction.—Perhaps I owe an apology to this Society for bringing up the subject of my paper to-night. To many of you the subject is well known, but my reasons for venturing to occupy your time with it are these:—1. Because the subject receives but scant attention in our text-books; 2. Because men seem to have a timidity and dread in dealing with the puerperal organ; and 3. Because there is no point upon which a consultant's opinion is more frequently sought.

That many lives have been sacrificed from want of due attention to the antiseptic washing out of the post-partum and post-abortum uterus there can be no doubt, and there is as little question that ignorance of the proper indications for and method of washing out have been accompanied by serious, even fatal results.

It may be that I ought to have reserved the remarks which follow for a less learned, less critical audience than the present; but in the hope that they may be of advantage to some of the busy Fellows of our Society, I beg to submit them to you.

At the outset, let me say that no one deprecates more than I do any manual interference with the parturient or puerperal uterus more than is absolutely necessary. Every examination made during labour is a possible source of infection, and still more so any opening up of the genital canal after labour develops a fresh source for the introduction of septic material in the still fresh wounds. Equally do I discourage the meddlesome interference of nurses with douches, syringes, and so forth, as routine in every case of labour, at least in private practice. I am very sure that the less the vagina is opened up the better will it be for the patient. If this be true of the vagina, still more is it so with regard to the opening up and interfering with the uterine cavity. Still there are conditions where interference with the caverni uteri becomes a pressing necessity. Let me try to formulate the circumstances under which antiseptic washing out of the uterine cavity is indicated.

Indications.—1. Where, with localized tenderness over the uterus, there is a high pulse and temperature, and a fœtid discharge. It is to be observed that the discharge must be fœtid *from the uterus.* In order to decide this question, it is essential to wash out the vagina with an antiseptic wash—inodorous, such as corrosive sublimate —and then putting the finger up and into the cervix to decide whether it is fœtid or not. As I shall have occasion to point out in the sequel, all first washings out should be performed under chloroform, therefore I always explore the cavity of the uterus with the finger. I need not here refer to the ease with which this can be performed, at least during the first week of the puerperium. Even at a long period after labour, the carbolized fingers can be comparatively easily introduced. In most cases some morbid product will be found, and in all cases the necessary dilatation of the cervix will much facilitate the process of washing out.

2. Where, with a high pulse and temperature, there is any question as to the absolute complete delivery of the placenta; and in this connexion it is impossible to emphasise too strongly the importance of examining closely the placenta after delivery, whether it be expressed, extracted, or delivered spontaneously. Such care will often eliminate at once any possible cause of infection.

3. Where portions of membrane have been retained *in utero,* and give rise to increase in pulse and temperature. Here, however, let me say it is possible to do harm in endeavouring to remove the membranes completely at the time of delivery. It is much better to leave a portion of membrane than to open up the genital canal in search for a small piece.

4. After the birth of a putrid fœtus.

5. Where the uterus remains abnormally large after labour, and where, as a result, owing to the presence of decomposing clot,

symptoms of septic infection develop themselves. In such cases washing out ought to be accompanied by the introduction of the finger within the uterus, and in all such cases quinine ought to be administered in large doses.

6. In cases where, late on in the puerperium, symptoms of septicæmia develop themselves.

7. In those somewhat rare, yet well-recognised cases where, from acute flexion of the uterus, the lochia are retained and decompose.

8. In some cases of imperfect abortion and premature labour, and in all cases where the uterus, under such circumstances, has been curetted.

9. In all cases where the hand has been introduced—say in cases of post-partum hæmorrhage, adherent placenta, or uterine hydatids—washing out the uterus with hot antiseptic water is the recognised treatment.

Rationale.—What is the rationale of washing out the puerperal uterus in septicæmia? It seems at first sight open to doubt how far washing out the uterine cavity can prove effective in checking septicæmia if rapidly multiplying microbes have already passed into the system.

This point was alluded to during the interesting discussion which took place last session on the relation of micro-organisms to puerperal fever, viz., that micro-organisms require the condition of rest for their development. They do not multiply in the circulating blood. Dr Freeland Barbour neatly and forcibly put it thus:—"That in those cases the toxic material does not multiply in the blood, but is generated in the uterus alone, from which it is served out into the system and eliminated by the excreting organs. The relation might be illustrated from the gas supply of a city, in which the gas is, of course, produced at the retorts at the central work, and is simply served through the pipes and eliminated at the burners. By washing out the uterus we put out the retorts and stop further production, the elimination of the poison being only a question of time." Now, let me here say, that the value of washing out the uterus is confined to those cases where the septic material is developed in and confined to the uterine cavity. Where the development of the toxic material has gone beyond this, or where the septicæmia is developed originally outside the uterus altogether, obviously washing out the uterus will be of no avail.

Method.—As far as my experience goes, a good deal of misunderstanding exists as to the proper method of carrying out this operation. The following points seem to me worthy of attention:—

1. The patient ought to be so placed that her shoulders are raised while her pelvis is depressed. This is just the converse of what is required in gynæcological douching—the object being to prevent any quantity of the lotion remaining *in utero* by giving it

free escape. Two methods of accomplishing this can be adopted —either by placing the patient on her back in the bed with a douche pan placed underneath her buttocks, or else that she be placed transversely across the bed with her hips depending across its edge. The latter seems to me the more convenient and satisfactory.

2. Care should be taken that the os uteri is patent, so as to allow a free escape of fluid. Frequently, however, it is closed, and when such is the case recourse must be had to the grooved glass tubes, or to the double channelled catheter. The glass tubes are the more generally applicable, for one amongst other reasons, as the sublimate solution corrodes a metal instrument, and the eye of the catheter readily gets blocked.

3. The continuous douche is preferable to the ordinary syringe; but inasmuch as the douche can is not always at hand, the syringe will be the most usually available.

4. The tube should be carried right up to the fundus uteri, and if the syringe be employed it ought to be used slowly, steadily, and without jerking.

5. The fluid ought to be injected at a temperature of about 115° F., and continued until it return quite clear and sweet, or at most mixed with a little pure blood. Special attention ought to be paid to having the temperature high, so as to induce uterine contraction, and that for two reasons—(1), Because the uterus in these cases is usually atonic; and (2), specially in those cases where corrosive sublimate is employed, so as to insure that none of the salt remains in the uterus to act as a poison.

6. A point of essential importance is that the fundus uteri should be grasped by the hand of an assistant in such a manner that the thumb and middle finger compress each Fallopian tube, so that at one and the same time the fluid may be squeezed out of the uterus, brought intimately in contact with the whole uterine surface, and prevented passing above the Fallopian tube. It must be borne in mind that the puerperal uterus is frequently rotated on its transverse axis, and therefore must be grasped obliquely.

7. I would strongly urge that the patient should be placed under chloroform for at least the first washing out. I am confident that many cases suffer from the want of this precaution; because, owing to the tenderness of the parts, it is impossible to manipulate the uterus and instrument properly, the tube being not carried beyond the os internum, if so far. And, besides, it gives the operator the opportunity of exploring the cavum uteri, if need be; and I may add, it is usually best to do so.

Form of Antiseptics.—The only two forms of antiseptics which are sufficiently reliable are either carbolic acid or corrosive sublimate; and of the two, corrosive sublimate seems, with proper and careful precautions, to be the form upon which most dependence can be placed. It is not, however, without its objections. The ease with which it is absorbed, and the small quantity required to produce its toxic effects, must be kept strictly in view in using it. Not only is it readily absorbed by the uterus, but even when used for the vagina alone its poisonous effects become manifest; and there are not wanting numerous cases where serious corrosive sublimate poisoning has taken place, some of which have ended fatally.

Keller has shown that in most cases mercury can be detected in the urine after irrigation of the uterus or vagina with sublimate solution of the strength of 1 in 1000 or 1 in 2000, but, of course, most frequently after washing out the uterine cavity. I have myself been able to detect it in my hospital cases when the solution has been much weaker, and in one case where the vagina alone was syringed with a solution of 1 in 3000 before labour, I found traces in the urine.

Keller records a fatal case of mercurial poisoning. Von Horff in his paper reports thirteen cases of serious corrosive sublimate poisoning. Partridge records a death after two irrigations of the uterine cavity with a solution of 1 in 2000. Thorn records three cases of poisoning, two of which were fatal. In each of the cases the strength of the solution used was 1 in 1000. In the *first* case the uterine cavity was washed out after the expulsion of a putrid fœtus. Immediately after there was collapse, scanty flow of urine on the third day, diarrhœa, albuminuria, salivation, and ultimately recovery. The *second* case the uterine cavity was washed out, after the expulsion of a three months' fœtus, at the sixth month. Death occurred on the ninth day, with symptoms of mercurial poisoning. The *third* case was one where the vagina alone was irrigated, and the patient died on the ninth day.[1] The cause of these serious, sometimes fatal, symptoms obviously is to be found in the strength of the solution used, none of those in whom serious symptoms developed themselves being weaker than 1 in 2000, and some of them as strong as 1 in 1000.

In using corrosive sublimate care must be taken that the solution be not stronger than 1 in 4000 or 1 in 5000. The numerous experiments of Koch, Tarnier, and others, have shown that this is strong enough for all practical purposes. There are, however, two conditions in which it is of the utmost importance to be careful in the use of corrosive sublimate, and these are in profound anæmia, and where there is any kidney disease. In both of those cases carbolic acid will be found a more suitable and safe antiseptic.

Safety of Operation.—A good deal of misunderstanding has existed, and still exists, among practitioners as to the risk attending the operation. A good deal of this is no doubt due to the fact that men compare the risk of this operation with the risk of injecting strong escharotic solutions, for therapeutic purposes, into the non-puerperal uterus,—a method of treatment for long advocated and adopted by the French school. The risks of this latter operation are so great, in my opinion, as to render its adoption entirely unwarranted. But then the two cases are by no means parallel, and for these reasons:—In the non-puerperal uterus (1), the fluid introduced is a strong caustic; (2), the os uteri is closed; (3), the fluid is kept long in contact with the uterine wall; (4), there is no means of pressing on the fundus; (5), there is nothing to prevent, but everything to encourage, acute inflammation, as well as the passage of the fluid along the Fallopian tubes into the peritoneal cavity, whereas the washing out of the puerperal uterus with a weak antiseptic solution is practically without danger, provided it is done in the way and with the precautions that I have just described.

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[1] In my own experience, both at hospital and in private, I have met with frequent cases of corrosive sublimate poisoning in a minor degree.

Contraindications.—To the uniform employment of intrauterine douching there are, of course, contraindications, or rather I should say conditions, which render the employment of it impracticable; such are the presence of perimetric or parametric inflammation, with or without deposit. In such cases intrauterine douching will not only do no good, but it will probably render matters considerably worse. It will do no good, because the source of infection has passed from the uterus into the veins in the broad ligament, or into the lymphatics, and hence the washing out will not reach the source of the evil, and it may make matters worse, for it will increase the inflammation in the surrounding tissues.

III.—THE CÆSAREAN SECTION.

By J. Stuart Nairne, F.F.P. and S. Glasg., Vice-President Glasgow Obstetrical and Gynæcological Society, Surgeon to the Glasgow Samaritan Hospital for Women.

(*Read before the Glasgow Obstetrical and Gynæcological Society, 23rd February* 1887.)

(*Continued from page* 911.)

The Statistical Horror.

And now for the statistical horror, over which I shall linger only for a few moments to emphasise my distrust, my disgust, and my contempt for statistics as statistics. Does one man want to belittle the work of another? he points out, disingenuously of course, his percentage mortality. Does he want to laud his own work? he points triumphantly to his own recovery list. And who is to know really the difference between them? Has the first man, like a brave pilot, endeavoured to steer every shattered bark that has come across his path into some peaceful harbour? not always successful, perhaps not even often successful, but always daring, kind, generous, and shedding at least "a little kindly light amid the encircling gloom." Laborious painful task of him to be recognised honourably by few as a hero, but supported in his inmost soul by honest conviction that here is a great work to be done "without money and without price." He, indeed, has the reward within. But the other, abandoning to the wild waste of waters every apparent sinking ship, can bring into port, with flying bunting and at beat of drum, an apparently dishevelled, but not otherwise endangered craft.

I speak poetically, figuratively, but the figures of speech to such an audience as this require no explanation.

We all know that statistics, as such, are barely worth the paper they are written on. Unless we knew all the circumstances of each individual case, there could be no comparison, and fallacies and errors will creep into the most elaborate papers. In an editorial in the *British Medical Journal*, no further gone than last week, a misleading statement has been made as to the success of operations on the brain, which the operator there referred to would himself be the first to correct. You can make nothing of statistics, or you can make anything out of them. You dare not build operations on them, else you are building on a false foundation. Your operation procedures must be based on science—the scientific knowledge of medicine and surgery. Allow me to quote from a master as to what is really valuable: "Almost everything great in medicine has been done by the scientific method, while the works of medical philosophy lie thickly around us, chiefly as encumbrances . . . . (p. 273). The scientific practitioner, if such a being be as yet a possibility, is he who can tell why he has faith in his remedies, so as to satisfy every one capable of judging . . . . (p. 275). In the lamentable deficiency of scientific medicine, the practitioner is constrained to lean on authority and other such frail supports . . . . (p. 275). Between our present insecure position and a sound scientific basis of medicine, the gap seems almost infinite—to be beyond our power to bridge over . . . . (p. 277)." Writing to Faraday, Liebig makes the following remark on his visit to the meeting of the British Association at York:—"What struck me most in England was the perception that only those works which have a practical tendency awake attention and command respect, while the purely scientific, which possess far greater merit, are almost unknown. And yet the latter are the proper and true source from which the others flow. Practice alone can never lead to the discovery of a truth or a principle" (p. 280, *Edinburgh Obstetrical Society Transactions*, December 10, 1873).

Such is the true spirit of all progress. No greater, worse, or mean criminal fallacy could be than to endeavour to establish any kind of operation by a reference to mere statistics, in which there must be elements of doubt, and where the issues themselves, even from these statistics, are dubious and terrible.

How is it that during the last period of twenty years at least in Glasgow—during which, to my own knowledge, the Cæsarean section has been performed on various occasions—we have never had brought before us a full description of the cases, the manner of operating, and the results? How will an operation ever come to be improved unless the whole circumstances of each one that occurs are put before us to study, to ponder? Why burke all such cases? Bring them all to the light of day, and let us consider them dispassionately; let us point out the faults we see in them, and so aim at providing a cure. Were this done faithfully and diligently, I might say devoutly, science would light up the dark spots, and give us true principles of surgery, and we would bid a welcome farewell to numbers.

"Death takes us by surprise,
And stays our hurrying feet;
The great design unfinished lies;
Our lives are incomplete."

—"Birds of Passage," "Charles Sumner," Longfellow, Geo. Routledge & Sons, 1875.

Conclusion.

Is there another operation in all Surgery that has been so neglected as this? Paralyzed at the prospect of cutting open a living mother to extract a living child, we in these Islands have incontinently extinguished the light, and have chosen to work in the dark, and plant the destroying murderous stab in the head or face or breast of the helpless, hapless child. Could the mother but hear one cry from her inarticulate babe, the "safety of mother" plea would vanish into thin air, and be heard of no more. Then, indeed, men of genius and talent would bend their energies not to the elaboration of destroying tools, but to the perfection of the only legitimate operation under such painful circumstances. If one tithe of the ability, perseverance, ingenuity, that have been expended on perforation and such like had been expended on the perfecting of this operation and treatment, long ere this craniotomy and embryotomy would have been things to have spoken about with as much horror as the "apparatus major." Indeed, if a comparison of the life history of this operation might be made, that between lithotomy and Cæsarean section would show astounding results.

Take them both, so far as they can appear to us, in the most remote times. "*Legite Celsum.*" There the operation for lithotomy is the simplest that can be done: true to Nature, and erring only in want of means to accomplish the work safely. Fingers in the rectum, the bladder pressed down, the lateral incision, the finger to hook the stone out. A little further on and the clue lost—surgeons wandering over the whole fields of invention with dilators, and all the infernal murderous machinery of the apparatus major. A little further on, and the clue again taken up and followed scientifically, philosophically—the staff and the knife only. Simplicity itself. And so with the Cæsarean section. At first, simple, plain incision—get out the child the readiest possible way if it will not come the usual way. Then a natural shrinking from the fatalities consequent on the operation. Then a losing of the clue, that the simplest way must be the best way if it can be rendered safe; and a flying off to a totally different operation—questionably not so fatal—but, at any rate, not so formidable looking. And now we seem in the very centre of an apparatus major period for craniotomy, when screws and trephines, and toothed blades, and the most powerful levers, are brought to bear for the extinction of an unoffending soul.

This must be the end of it. The intelligence, the humanity, the bravery of our people can surely stand this no longer. We must see that our duty is to save life, not to destroy it. Neither are we to balance between two lives which is the more valuable. They are both alike, and we must endeavour to save them both. A ship may be on the sea, labouring and sinking, and the life-boat coming up, the captain cries to two shipwrecked mariners, "I may take the two of you and you may both be saved, but if I kill one of you I may save the other." Would he not be justly regarded with detestation and horror? Sink or swim, if his boat can carry, they must all get in and have their chance. But the unborn babe cannot speak. It cannot even be heard to cry; but it is alive and strong, and desires to live. I shall speak out for the child—save it. Save the mother also. Kill none of them. And while I have a breath to draw, so long as I am spared in health and strength, I shall never again put the perforator into the head of a living child, or be a willing party to any such slaughter.

"It is to be feared that this operation would be too frequently and unnecessarily performed!" Such is the cry. To me that cry has only sound and fury, but no sense. I do not believe there is a man living on earth who would wantonly, needlessly, or carelessly perform such an operation. Do we not all value human life? Do we not all, from day to day, mingle in the joys and sorrows of our fellow-creatures? Do we not all know the pleasures, the security, the sanctity of home, with wife, mother, or child? And do we not all, each in our own way, do our level best for those who put themselves under our care? For shame, I say, to those who speak thus. There is no so hardened wretch who would place himself face to face with death, and confront the consequences of such an operation. Who would not rather bend his knees and seek for higher help? I speak not in the way of cant, for cant is an abomination to me; but I feel indignant that such slurs and slanders should be thrown out by men who, as a rule, are as incapable of judging an operation as they are of performing one; or who, if they perform, are cursed with that conceit that can see nothing good, or wise, or great, or even endurable, outside their own petty domains. We do not live for ourselves, or for the advancement of our own aims. We live to benefit humanity. We chose the profession; and while, I shall be frank to say, we all do what we think best for mankind, we tear each other to tatters, because others do not do as we do. Is it not time for us to learn to cease to be at enmity—to believe in the *bona fides* of our neighbour—to recognise that he is acting up to his best light, and that his light may, after all, be a pure and steady light, although we do not see it? Fortunately, I have not for this operation invented any new instrument to raise the ire of any one; but I have ventured on the expression of my opinion in a manner sometimes perhaps too forcible. I again beg to be excused. The life of even an ordinary practitioner like myself is anything but a calm and peaceful one. "I was for peace, but they made me for war."

No Comparison between Cæsarean Section and Ovariotomy.—It has been repeated over and over again that there is no comparison between the operations of Cæsarean section and ovariotomy. I think we all recognise that quite clearly; but we do not all recognise the further statement as frequently made, that it is hopeless and foolish to expect that the mortality from the former operation may be diminished in the same manner that the mortality from ovariotomy has been diminished. Why? The very conditions now that are looked upon as having been overcome in the latter operation were at one time as strenuously held up to be impossible of improvement. Think nothing of statements like these, pray. They possess neither merit nor originality, nor do they allow for the possibility of any improvement whatever.

Cæsarean Section to be Compared with Porro's Operation.—The only operation which can be compared reasonably with Cæsarean section, and may be taken as an alternative, is Porro's operation. I have given you quotations to show that this operation was not only suggested, but experimented, by Dr Blundell, and urged with all the modern reasons for its adoption. It is a scientific operation, and deserving of the deepest study, and must always be taken into consideration in any proposed case of Cæsarean section. Should death occur after it, it would probably be due to shock. If shock could be averted, the patient would probably recover.

With regard to the case I have brought before you to-night, I was prepared to do this operation, but on opening the abdomen, and finding, after the extraction of the child, the method in which the uterus had become enlarged, with the broad ligaments stretching out on each side, I did not see that I could pass the wire-clamp readily over the stump without producing such a degree of tension that I considered would be still more dangerous.

And, again, the section appeals to all our notions of what is most appropriate. Why should these wounds not be stitched? and why should they not heal? I have not mentioned a single word of

Continental or American practice at the present moment. You must all be aware, as well as I, how successful the improved Cæsarean section has been becoming; and although some statements have been made, to my mind by unpractical men, such as that of turning in the peritoneal surface of the divided uterus in stitching it up, I would rather leave these points in the meantime to your own consideration. Time is short, and I have already trespassed too much on it.

But now surely we are looking through the mists that are only a little way removed from a brilliant dawn; and when it does come, we shall see the end for ever of those dreadful instruments, the perforator, the cranioclast, the cephalotribe, and all that Moloch host of life-destroying tools. Such, at any rate, is my clear conviction, that many years shall not pass by before obstetric surgery, waking as from a dream, will realize that it holds the key of promise that can unbar the gates of Giant Despair.

Cæsarean Section—Summary.

To sum up—

1. Cæsarean section is the only legitimate operation when, from deformity or other conditions of the pelvis, a living child cannot be born.
2. Cæsarean section is not an alternative of craniotomy—it ought to supersede craniotomy in the case of all living children.
3. Craniotomy must be reserved for cases of dead children.
4. Cæsarean section is not to supersede the use of the long forceps. It is to succeed them in cases where they have been legitimately tried.

I have spoken perhaps beyond my right, and in a manner that may be considered too violent. But I am speaking in earnest; and I know that hitherto any attempts of mine to open up this question have been firmly ignored; and men have not hesitated to make special visits to societies for the purpose, the avowed purpose, of crushing out all such inquiry and advance. I care nothing for this opposition personally. Progress will be made although I should not be here, and the loud-voiced trumpet of science will ultimately put to silence the babble and hysterical sentiment of *quasi* professors of surgery and others who do not realize or recognise the scientific advances that have recently been made.

I beseech you, the Fellows of this Society, the youngest,—shall I say the most ardent and earnest of all the societies of this city,—to give the matter your calm attention. You have bestowed on me the high honour of electing me one of your Vice-Presidents, and I entreat you, if I have been worthy of that honour, to grant me still this other favour. Do not look to the manner of my advocation, but look to the matter; consider what I mean to be at; differ from me if you will; and give reason for the faith that is in you.

IV.—SECTIONAL ANATOMY OF LABOUR.

1. BEFORE LABOUR, AND 2. FIRST STAGE.

By A. H. FREELAND BARBOUR, M.D., F.R.C.P. Ed., Lecturer on Midwifery and Diseases of Women in the School of Medicine, Edinburgh, etc.

(*Read before the Edinburgh Obstetrical Society,* 10*th November* 1886 *and* 12*th January* 1887.)

(*Continued from page* 898.)

The structure of the lower uterine segment has the following peculiarities in its peritoneum, muscular wall, and mucous membrane.

The peritoneum is loosely attached over it, so that it can be readily stripped off from the utero-vesical pouch up to a certain line, which we may call the "line of firm attachment of the peritoneum." The fifth column gives the distance of this line from the upper end of the canal, measured along the uterine wall, which distance varies from 5 cm. to 7½ cm. Bandl gives it as 2 cm. above the upper end of the segment.

The muscular wall appears in section as consisting of plates which have a generally longitudinal arrangement. Of these the special feature is the ease with which they can be separated. In fact, the greater separability of the muscular bundles or plates, along with the diminution in thickness of the wall as a whole, is the chief anatomical feature by which the lower uterine segment differs from the rest of the uterus. The external bundles of fibres anteriorly are continued downwards into the anterior lip of the cervix and anterior fornix of the vagina. The internal bundles are, according to Bayer, of unequal length and overlapping, so that, looked at from the mucous membrane, they appear like the tiles of a house.

As to the bloodvessels of the lower segment, Bayer frequently refers to a large vein situated opposite to the firm attachment of the peritoneum, *i.e.*, opposite to the upper limit of the segment.

With regard to the mucous membrane of this segment there is a greater variation in the conditions found. Bandl described it as a decidua, but present only in patches, between which the muscular wall was bare; Langhans, Müller, and Hofmeier found a decidua similar to that which lined the rest of the uterus; Küstner and Marchand found in two cases a mucous membrane transitional between that of the cervix and decidua. It was lined with a surface epithelium; the cells furthest down resembling those of the cervix, while as they passed upwards they became dwarfed. Where this surface epithelium was present, the membranes were not united to the uterine wall. Bayer found that, while the lower part of the segment showed next the cervical canal a cervical mucus membrane and above a transitional mucous membrane such as Küstner describes, the upper part was lined with decidua resembling that of the rest of the uterus.

The relation of the membranes also varies greatly. While in some cases they have been found closely adherent up to the upper end of the canal, in others they were loosely attached, and even quite free for a considerable distance. We may accordingly sum up the results of this table regarding the structure of the lower uterine segment as follows:—(1) that in the middle line anteriorly the peritoneum covers it, as it does the rest of the uterus, but is less firmly united to it; (2) that the muscular wall resembles generally that of the rest of the uterus, differing, however, in thickness and separability of the plates; (3) that its mucous membrane is typical decidua, which in a few cases, in its lower portion, shows characters transitional from cervical mucous membrane.

As to the *origin of this lower uterine segment*, it is no longer a question of a mechanical taking up of the cervix to form the lower portion of the cavity of the uterus, the cervix thereby becoming shorter and shorter as gestation advances; but the idea that the cervix may contribute to the formation of the lower portion of the uterus by a process of growth plus a drawing up, has been revived by the investigations of Bandl, Küstner, and Bayer. To reconcile the fact of there being 4 inches in length (10 cm. anteriorly and 11 cm. posteriorly), from the point which Braune took to be the os internum in his section of the second stage of labour, with the persistence through pregnancy of a much shorter canal, of pretty constant length, lined by cervical mucous membrane, Bandl suggested the remarkable hypothesis that the greater portion of the muscular layer of the cervix is taken up into the lower segment of the uterus, while the mucous membrane remains below round the cervical canal. This pulling up of the muscular tissue of the lower segment of the uterus implied a stretching of the decidua over the lower pole of the ovum, and a breaking up of it into patches; hence the membranes were less intimately attached over the lower segment of the uterus.

The presence of a transitional mucous membrane (differing from normal decidua in the smallness of the cells and their being more closely packed, and in the covering of the surface with an unbroken layer of epithelium) in the two pregnant uteri described by Küstner, led that observer, looking at the lower uterine segment from the standpoint of its mucous membrane, to adopt the view that the segment must be cervical in origin.

The most elaborate research, however, into the origin of this segment is that given by Bayer, in his contribution of 250 pages on the Morphology of the Uterus (in Freund's *Gynæcological Klinik*). As his contribution is, from the amount of anatomical material he brings forward, of considerable importance, we must state his conclusions in detail and criticise them.

Putting on one side his study of the muscular fibre of the uterus by dissection, in which his results agree pretty much with those of Von Hoffmann and Kreitzer, except that he attaches great importance to the muscular fibres passing into the uterus from the round and utero-sacral ligaments, we look only at his sections.

He takes the arrangement of the cellular tissue between the muscular bundles (the dark colour of which contrasts with the paler muscular fibre) as a key to the musculature. He finds in the lower portion of the anterior wall of the non-pregnant uterus two muscular knots—one at the os internum, the other in the lower third of the cervix. From the former fibres spread over the greater portion of the cervix, from the latter into the substance of the anterior lip and fornix. By these knots the anterior wall of the cervix is differentiated into two zones corresponding to the vaginal and supra-vaginal portions. During pregnancy, the lower knot comes, he says, to stand opposite the upper end of the canal, while the part between it and the upper knot becomes the lower uterine segment.

Now for the proof of this from his pregnant uteri. Under the "*pregnant uterus, and the laws of its unfolding,*" he describes a beautiful vertical mesial section of a pelvis, with a three months' pregnant uterus; also the uterus alone from fourth, fifth, and seventh months; sections of the lower uterine segment from the ninth and tenth months; and pelvis with uterus at full time. In the third-month uterus, although the homogeneous appearance of the wall prevents our recognising the knots of muscular tissue, he says that we see the action of the utero-sacral ligaments pulling upwards and backwards the posterior wall as well as the upper part of the anterior. Opposed to this we have the vaginal wall pulling on the lower muscular knot, whence also the ampulla-like dilatation of the cervix. Further, one portion of the round ligament pulls against the utero-sacral, while the other pulls on the lower of the two muscular knots, and causes the anteflexion of the uterus. We see here, he says, the action of the factors which produce the lower uterine segment, viz., the traction of the utero-sacral and round ligaments, and the counter-pressure of the ovum. In the fourth month's uterus, he finds the muscular fibre of the anterior wall divided into two layers, of which the outer passes to the lower, the inner to the upper knot. In the fifth month he finds that the knot in connexion with the external layer has not materially moved from its position in the non-pregnant uterus, while the knot at the lower end of the inner layer has moved for a considerable distance upwards. The outer layer has, in fact, been fixed by its firm attachment to the anterior fornix; the inner layer has slid upwards on it. "*The sliding of inner layer upon outer layer governs the whole changes of pregnancy during the early months.*" This is, according to Bayer, a law of the unfolding of the pregnant uterus. One should mention in passing that this unfolding of the upper part of the cervix takes place only in the anterior wall.

In criticising these statements of Bayer's, I hand round the drawings which he gives of his preparations, and allow the Fellows to judge for themselves to what extent they bear out his opinions. In looking at them, will you note the following facts.

(1.) In the unimpregnated uterus, the two knots appear in one line instead of standing the lower at the end of an outer, the upper at the end of an inner layer of muscular fibres.

(2.) In the uterus, at the third month of pregnancy, the knots in the anterior wall are not described; the explanation of the sharp anteflexion of the uterus as due to conjoined action of the utero-sacral and round ligaments is quite intelligible, but the specimen is evidently pathological, and we are not justified in reasoning from it to the condition of a normal uterus at the same period. If, on examining a patient, we found the uterus sharply anteflexed, drawn backwards in the pelvis, with the cervix looking downwards and forwards, we should put it down as a case of pregnancy in a retroposed uterus.

(3.) The fourth-month uterus presents the same condition of the cervix as the non-pregnant uterus. The bundles of muscular fibre seem to embrace the spindle-shaped figure or knot referred to rather than pass into it.

(4.) In the fifth-month uterus, so far as one can judge from his plates, the spindle-shaped figure has the same position at the fifth month as at the fourth, being in both instances opposite the upper end of the cervical canal; the difference between the two is in the vein, which in the fourth month lies in the heart of, in the fifth month some distance above the fusiform figure. As far as the arrangement of muscular fibres goes, we do not see in this preparation any support of Bayer's view; it only seems to show that the relation of the vein to the muscular fibre is not constant.

(5.) In the uteri at the seventh month and onwards we lose sight altogether of the upper muscular knot. Bayer's description of the muscular fibre in the fully formed segment agrees with that of Ruge and Hofmeier, in stating it to be of muscular plates having a general longitudinal arrangement, and unlike those in the rest of the uterus in their being more easily separable from each other. He differs from the others, however, in making the layers of unequal length, the shortest being most internal.

The lower uterine segment is now defined only from the firm attachment of the peritoneum and the presence of a large vein. But the fact that the firm attachment of the peritoneum is found at a higher level at the tenth month than at the fifth, cannot be taken as evidence that the upper end of the cervix has moved upwards to a corresponding extent during the same time. For observe that "firm attachment of peritoneum" is not synonymous with "reflection of peritoneum." If the lower uterine segment were not covered at all with peritoneum it might point in the direction of its being cervical in origin; but it is covered with peritoneum, although the connexion is lax. Further, Bayer describes the external layer of muscular fibre lying immediately under the peritoneum as not materially changing its position. The lower knot does not move upwards. It is difficult to understand how the peritoneum, which is separated from the sliding internal layer by the stationary external layer, should yet be carried up along with the former. The position of the coronary vein seems to vary in different uteri. I referred to this in comparing Bayer's fourth and fifth months' uteri; and draw attention also to the fact, that while Bayer (like Braune) generally finds it at the upper end of the lower segment, in Waldeyer's section and my own it is at the lower end; while in many sections it is not mentioned at all.

As to the *mucous membrane* covering the lower segment in the later months of gestation, while describing a transitional membrane on the anterior wall close to the cervical canal, he finds the rest of the segment covered with a true decidua. He regards the change in the mucous membrane as connected with the unfolding of the cervix, but cervical mucous membrane does not produce decidua different from that produced by the body; and the transitional mucous membrane is, therefore, only decidua at a younger stage. His examination of the mucous membrane leads him to the conclusion that the determination of the os internum from the boundary of the mucous membrane is entirely fallacious, and that further investigation along this line is superfluous. In this summary way he ejects from the court, on the ground of unscrupulous mendacity, one of the most important witnesses for the opposite side.

But, it will be said, granting that the evidence of the mucous membrane is valid, what do you make of Küstner's transitional mucous membrane? This has only been found *in a limited number of cases.* Küstner and Bayer both find that the layer of surface epithelium ceases where the membranes become adherent. Now, although the microscopic characters of the mucous membrane are not given in the great majority of cases in the table, still I think we are justified in assuming that where the membranes were adherent up to the beginning of the canal this surface epithelium was not present. For we could not have the reflexa blended with vera, and yet surface epithelium present on the latter. Further, not all the cases where the membranes were separated could be described as cases where the surface epithelium was present, for the separation of the membranes may have been artificial. The condition, therefore, described by Küstner we must regard as exceptional; and it is quite possible that it may be pathological.

Further, in the uterus examined by Küstner and Marchand, and from which are taken the microscopical preparations figured in the paper of the latter, the transitional epithelium is not found on the anterior wall of the uterus; which shows a thickened decidual swelling having no surface epithelium. Commenting on this Marchand says, "This circumstance is not prejudicial to the fact that the upper part of the cervix in the later stage of pregnancy takes part in the formation of the uterine cavity; it proves only that this dilatation (or more correctly, flattening out) of the cervix takes place chiefly at the sides." Bayer, on the other hand, affirms, and in this we think he is right, that the lower segment develops chiefly from the anterior wall; and it is noteworthy that at this very place Marchand finds no transitional formation.

Accordingly, after a careful study of Bayer's paper, we come to the conclusion that no sufficient evidence has been produced that the lower segment, which resembles in its essential structure the rest of the uterus, is cervical in origin; and until new evidence is brought forward we see no reason to ascribe to it an origin different from the rest of the wall of the uterus. We, therefore, still place the os internum *where the canal lined with cervical mucous membrane ceases.*

Even supposing some future observer should demonstrate that this lower uterine segment is cervical in origin, this would not alter the fact that in its essential features it is allied to the rest of the body of the uterus rather than to the cervix. The result of granting Bayer's hypothesis would only prove that the muscular tissue of the cervix can be converted into muscular tissue like that of the uterus, and cervical mucous membrane into uterine decidua. And, on this ground, the discussion as to what is os internum would be on a par with one as to what was the true gate of the Queen's Park after the commissioners had allowed a portion of the park to be taken into the city and covered with streets and houses.

There are several points with regard to this segment which have, I think, a common and very simple explanation. It comprises almost entirely the anterior wall and sides of the uterus, it is thinner than the rest of the wall, its muscular bundles are more easily separable, and the peritoneum over it more easily detached. Now, during pregnancy, the patient is for two-thirds of the time in the erect posture, for one-third in the recumbent, hence the weight of the uterine contents (which is considerable after the fourth month) will act chiefly on the lower part of the anterior wall, so that it will be subjected to more continued pressure than any other part. Now, this pressure must affect the process of growth, and I think we see this effect in the situation and character of the lower uterine segment. May not also the passive rôle which this segment plays during labour be due to paresis from stretching?

(To be continued.)

V.—THE DIAGNOSIS AND TREATMENT OF CEREBRAL ABSCESS DUE TO EAR DISEASE.

By P. M'Bride, M.D., F.R.C.P.E., F.R.S.E., Surgeon to the Ear and Throat Department of the Edinburgh Royal Infirmary, and Lecturer on Diseases of the Ear and Throat, Edinburgh School of Medicine; and
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(*Read before the Medico-Chirurgical Society of Edinburgh*, 2nd *March* 1887.)

Part I., by P. M'Bride.

To say that ear disease is a common cause of cerebral abscess is but to repeat a truism—recognised alike by physician, surgeon, and specialist. Were statistics required, we might refer to the elaborate table compiled by Gull and Sutton, and published in Reynolds' *System of Medicine* (vol. ii.), or to Lebert's classical papers on this subject (Virchow's *Archiv*, vol. x.)

Chronic suppuration of the middle ear is the variety of aural disease which is most likely to lead to cerebral mischief. Indeed, exceptions to this rule are rare; occasionally, it is true, acute suppuration within the tympanic cavity proves fatal, and Zaufal has recorded an example of serous catarrh of the middle ear resulting in death from intracranial inflammation. We may, however, look upon such cases as interesting only from their rarity.

Granted, then, that in chronic suppurative otitis media we have to fear head symptoms, the question before us may be discussed under the following subdivisions:—

1. Given a case of chronic suppuration of the middle ear with head symptoms, what are the pathological conditions which may give rise to these symptoms?
2. How far can we by their semeiology alone differentiate these conditions?
3. Will a careful examination of the ear, objective and subjective, aid us in localizing the brain lesion?
4. Having made our diagnosis as complete as possible, should treatment be attempted?

(1.) *The pathological conditions which may produce head symptoms in the course of chronic suppuration of the middle ear.*

There is no doubt that in these cases it is often extremely difficult to say precisely when the patient, even though he present acute symptoms, is actually attacked by a gross lesion of the brain. In other words, it is frequently impossible to define when the stage of irritation is over and active inflammation has begun.

To illustrate my meaning I may be allowed to refer briefly to a case which I saw in consultation with Dr Bruce. The patient, a little girl suffering from chronic suppurative otitis media, was suddenly attacked by intense pain in the mastoid region. This part was swollen and tender; the whole aspect, when the patient was examined, was that of acute fever. The temperature was 106°, there was great intolerance of light, and a rigor had occurred. We agreed to open the mastoid antrum next day, and meanwhile ordered leeches over the mastoid. The patient had long hair, and the leeching was entrusted to a relative, a medical student. Owing to an oversight, the leech bites were allowed to bleed all night, the blood being prevented from flowing over the pillow by the patient's hair. Next morning she was almost quite well, and in a day or two made a good recovery. Another case similar in many points, but more grave, because the symptoms developed less rapidly and lasted for some days, is the following:—

A young woman had been seeing me off and on for some years for an otorrhœa, of which she was at one part of this period virtually free. She had a perforated drum membrane, suppuration of the tympanic cavity, and in addition a granulation growing from the posterior and upper wall of the osseous meatus. This granulation was perforated in its centre, showing it to be the pouting orifice of a sinus, which led backwards towards the mastoid. Repeated removal of the growth and cleanliness eventually relieved her of the otorrhœa. After this I did not see her until asked to do so by Dr Carmichael, who considered that cerebral symptoms had set in. The ear was at this time blocked by a large granulation, and discharging freely. The mastoid region was swollen and tender; the granulation was removed, but no benefit resulted, so we agreed that opening the mastoid should not be delayed. I need not detail the steps of the operation. It was found that the mastoid process proper was converted entirely into ivory-like bone. In such cases, speaking generally, it is not justifiable to chisel to any great depth, but in this instance we considered the danger to be so imminent that I determined to go on until the mastoid antrum was reached. This intention was, however, frustrated by an unexpected contingency. While working with a gouge at a considerable depth the wound suddenly filled with dark venous blood, evidently from the lateral sinus. No drain was established; the bleeding was stopped by plugging with lint dipped in carbolic oil, and yet the desired result was obtained. The head symptoms disappeared, and complete recovery was only retarded by a pneumonia—whether embolic or not I do not know. I may remark that the operation completely removed the otorrhœa, and that, *mirabile dictu*, the granulation never reappeared. For this last-named result I can offer no explanation except that the counter irritation of the operation acted as a cure; but then at once arises the question, What is counter irritation?

Of course in these two cases there was probably no severe gross lesion of the intracranial cavity, for one was relieved by bleeding alone, and the other by counter irritation—certainly of a severe kind—and bleeding. In this connexion, however, I cannot but mention that cases have been recorded of optic neuritis, and even paresis of the sixth nerve with head symptoms, occurring in the course of, and due to, ear disease in which recovery took place.[1] From these remarks it will be seen how difficult it is to say when the patient is in a hopeless condition, and when such a serious operation as opening the cranial cavity is justifiable.

I think, however, that, all this notwithstanding, those who are accustomed to see head cases will agree with me that, in all of those which end fatally, a time arrives at which both the medical man and the relatives begin to give up hope, and it is then that any attempt at relief, however heroic, becomes justified. Chronic suppuration of the middle ear may produce various intracranial changes, viz., cerebral abscess, meningitis, and thrombosis of cerebral sinuses.

The form of cerebral abscess commonly met with is that which has been termed by authorities "chronic." Chronic it may be in its pathology, and chronic I often believe it to be in its symptoms, yet when it has advanced so far as to be suspected, the symptoms are commonly acute, and the patient has not many weeks to live. Meningitis, when due to ear disease, seems to be usually of the purulent variety, the pus from the ear bursting through the osseous walls of the cavities of the ear, and detaching, while not unfrequently perforating, the dura mater.

Thrombosis of the cerebral sinuses, especially the lateral, may result from ear disease, but not uncommonly an intracranial abscess is associated with this condition, perhaps as a result of spreading phlebitis.

(2.) *Can we, by their semeiology alone, differentiate these three conditions?*

This question I have no hesitation, from my own experience, in answering in the negative. Pain in the ear and head is the most prominent symptom in a case of chronic suppuration of the middle ear which threatens to have a fatal issue. Rigors are commonly met with; the tongue is either abnormally red or furred; cerebral vomiting may occur; the temperature often rises; but no doubt in many cases of intracranial abscess both pulse and temperature are at some period after the onset of acute symptoms persistently subnormal. Indeed, when this condition exists or has existed, I should look upon its existence as rendering it more probable that a well-defined collection of pus—rather than diffuse meningitis or phlebitis—is the cause of head symptoms. Twitching, delirium, and, finally, coma, may be met with both in cerebral abscess and meningitis, while in both there may be congestive changes in the optic discs. As a rule, marked paralysis, except of the facial, is rarely associated with head mischief arising from chronic ear disease, although I have met with paresis of the third. Paralysis of the facial may signify simple neuritis or carious destruction of the osseous canal. At all events, this form of paresis is generally due to direct action on the nerve trunk as it wends its way through the petrous bone, and not to disease of its centres.

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[1] Roosa, *Diseases of the Ear*, 6th edition, p. 551.

In thrombosis of the cerebral sinuses—a condition not unfrequently associated with both abscess and meningitis—we have also headache as a prominent symptom. Further symptoms gradually develop, and death ensues. In these cases, however, there are certain points to guide us. In the first place, the course of the case corresponds more or less to pyæmia, and metastatic abscesses may develop in other parts. The joints may become tender, although more often the pains are most marked in the course of muscles (Lebert). The fever is of a distinctly remittent type,—the temperature fluctuates, the pulse rate varies, and profuse perspirations and rigors occur at intervals.

If the lateral sinus—and this is the form most to be dreaded in ear cases—be involved, we may have œdema of the mastoid region; but as in such cases there is frequently mastoid disease, this symptom loses much of its value. The inflammatory affection may, however, extend down the jugular, and the latter is then corded and the side of neck tender to the touch, while spasm of the sterno-mastoid muscle may co-exist. It should, perhaps, also be mentioned that thrombosis of the internal jugular may cause symptoms pointing to pressure on the glossopharyngeal, pneumogastric, spinal accessory, and hypoglossal nerves.

So far, then, we may say that to some extent we have means of forming an opinion as to whether we have to deal with intracranial inflammation associated with phlebitis or not. The fact, however, remains, that in most cases—even when we are fairly certain that phlebitis of the lateral cavernous or superior petrosal sinus exists —it is impossible to exclude the co-existence of such conditions as meningitis and abscess.

Again, in cases of abscess we have sometimes a history of previous cerebral attacks recovered from; and if this be clear in the case of a patient suffering from head symptoms associated with ear disease, the physician is inclined to suspect encapsuled abscess rather than diffused meningitis.[1] This, then, leads us to the third question—

(3.) *Will a careful examination of the ear—objective and subjective —aid us in localizing the brain lesion?*

The late Mr Toynbee, in a paper read before the Medico-Chirurgical Society of London in June 1851,[2] laid down certain rules as to the association between different forms of ear mischief and brain disease, viz.:—

1. Affections of the external meatus and mastoid cells produce disease in the lateral sinus and cerebellum.

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[1] Ross, *Handbook of the Diseases of the Nervous System*, p. 626.

[2] See *Transactions*, vol. xxxiv.

2. Affections of the tympanic cavity produce disease of the cerebrum.

3. Affections of the vestibule and cochlea produce disease in the medulla oblongata.

Recent writers on cerebral abscess are still in the habit of quoting these statements, and therefore it behoves us to consider them carefully, with a view to ascertaining whether they be accurate or not. That disease of the meatus may possibly give rise to brain mischief I will not deny, but that such cases are most exceptional is well known. Moreover, in the paper referred to there is given an elaborate and carefully compiled table of fatal cases of ear disease, which, however, fails entirely to show that disease of the meatus is likely to cause fatal cerebral complications. If we desire to understand what Toynbee considered to be disease of the meatus we must turn to his text-book, published, be it observed, in 1860—that is, nine years after the paper referred to —and there (page 73 *et seq.*) we find described as "chronic catarrhal inflammation of the dermoid meatus extending to the brain" a case of chronic suppuration of the middle ear involving the meatus and mastoid cells in its course, and, finally, causing phlebitis of the lateral sinus. There was extensive caries of the temporal bone, and on post-mortem examination it was found that the tympanic membrane was absent. Toynbee looked upon this last-named condition as secondary to the inflammation of the meatus, but in the light of modern otology we know that in such cases the tympanic cavity is first attacked.

As to Toynbee's assertion that inflammation of the nervous apparatus of the ear produces disease of the medulla oblongata, it rests upon slender foundation; for of three cases, in one it is not mentioned that the medulla was affected, and in the other two it seems, from his table, that this part may only have been involved in a diffuse purulent basilar meningitis. This view is confirmed by Schwartze, who observed a case of primary purulent inflammation of the labyrinth, in which diffuse purulent basilar meningitis was produced. The case just quoted is almost unique, for generally purulent inflammation of the internal is secondary to a similar condition of the middle ear. It is further confirmed by Bezold,[1] who has analyzed, from a statistical point of view, forty-six cases of necrosis of the labyrinth. In seven cases only did death result, and in most of these it was due to disease of the cerebellum. Toynbee's other propositions, however, as to the connexion between mastoid disease and affections of the cerebellum and lateral sinus on the one hand, and affections of the tympanum and cerebrum on the other, have much more in their favour, as is clearly shown by his tables, although the data are not sufficient to warrant a definite conclusion.

It behoves us now to consider whether we have any reliable data to ascertain what part of the brain is most commonly attacked in ear disease. With this object in view, let us glance for a moment at Roosa's statistics of fatal cases of ear disease collected from different sources,[1] forty in number. Briefly analyzed the results are as follows:—Cerebral abscess, 21 (1 abscess of pons); cerebellar abscess, 8 (in 1 there was also abscess of the cerebrum); diffuse suppuration, 1; clot in lateral or other sinus, 8 (in 1 there was also an intracranial abscess); severe meningitis, 1.

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[1] *Zeitschrift für Ohrenheilkunde*, vol. xvi.

This accounts for thirty-nine cases, and the fortieth is not sufficiently detailed to be of statistical value. The result of this analysis seems to show that more than 50 per cent. of cases of fatal ear disease are due to cerebral abscess, and probably most of these were owing to direct communication between the suppurating middle ear cavities and the brain or its membranes. There is one point in Roosa's tables that surprises me, viz., that there should be so few cases of death from diffuse purulent meningitis recorded, and I cannot avoid the suspicion that purulent meningitis and abscess have been classed together.

In considering a subject of such vital importance, however, we must not trust to statistics compiled by one author, and we therefore turn to the table showing the causes of cerebral abscess compiled by Gull and Sutton.[2] We here find twenty-seven cases in which the condition was due to ear disease, and the localities of the abscesses were as follows:—Cerebrum (1) localized abscess, 19 (1 in pons); (2) diffuse suppuration, 2 (1 between dura mater and bone); cerebellum, 6.

Here, again, we see that the cerebrum is most commonly involved; indeed, is involved in by far the largest number of cases; and I may add that in most of these the middle lobe, or that which is in most intimate relation with the ear, was the part affected (fourteen out of twenty-one).

It has seemed to me (notwithstanding these statistical results) that I am not justified in drawing any positive conclusions from them without compiling a table of my own. I have succeeded in collecting forty-four cases, and have only included in my list examples in which both the ear and brain were studied on the dissection table. I may mention that while post-mortem examination revealed that in by far the largest number of cases both tympanum and mastoid were involved, yet pain and swelling behind the ear were by no means constant clinical features. Hence we must infer that there may be an accumulation of decomposing pus in the mastoid antrum, and yet no symptoms indicating its presence.

Classified according to the part of the ear involved in the suppurative process, my tables give the following results:—

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[1] *Diseases of the Ear*, p. 554 *et seq.*

[2] Reynold's *System of Medicine*, vol. ii.

Part of the Ear affected.	Cerebral Abscess.	Diffuse Meningitis almost invariably Purulent.	Cerebellar Abscess.	Thrombosis of Lateral or other Sinuses.
Tympanum and mastoid. Total, 28.	12; 3 with diffuse meningitis; 4 with thrombosis.	6	2; 1 with thrombosis.	8
Tympanum alone, 5.	3; 1 sub-dural; 1 between bone and dura mater.	0	1 with pus over roof of tympanum.	1
Middle ear and labyrinth, 11.	0	6; 1, also a small abscess in the pons; 1 with thrombosis of lateral sinus.	4	1

These data, then, go to prove that in the majority of fatal cases the tympanum and mastoid are involved; and inasmuch as it seems that the mastoid antrum may be involved without clinical symptoms, we may, for practical purposes, consider the cases of tympanic and mastoid disease together with those in which the tympanum seems to have been involved alone.

This gives us out of thirty-three cases, fifteen of cerebral abscess, six of diffuse purulent meningitis, three of cerebellar abscess, and nine of thrombosis of the lateral (or other) sinus. Out of eleven cases in which the labyrinth also suffered, in six there was diffuse meningitis, in four cerebellar abscess, and in one thrombosis.

These facts show that to examine the condition of the labyrinth is of considerable importance in any case in which we have arrived at the conclusion that the brain lesion is a localized collection of pus.

If, then, in such a case bone conduction, as tested by the tuning-fork, be retained on the affected side, the chances are in favour of the abscess being in the cerebrum; but if bone conduction be lost, then we should suspect the cerebellum to be the seat of mischief. Beyond this, I do not think my statistics enable us to ascribe diagnostic value to the condition of the ear. For my own part, I should attach some importance to the presence or absence of mastoid tenderness. While, with or without tenderness, the mastoid antrum may be filled with pus, I am inclined to think that when pain is experienced behind the ear it shows a tendency to increased tension in the antrum. In other words, the inclination of the pus is to go backwards, and involve the cerebellum and lateral sinus; while if there be no indication of tenderness, I should expect a spread of inflammation through the roof of the tympanum to the cerebrum. Mr Hulke suggests[1] that in the young, brain abscess from ear disease is more commonly situated in the cerebrum, and in adults in the cerebellum. To test the accuracy of this suggestion, I have analyzed all the cases in my table of intracranial abscess in which the ages of the patients are stated, and find a total of nineteen. Of these fourteen were cerebral and five cerebellar. Of the former in three cases only were the patients under 20, the ages being (19, 17, 8); and of the latter one was 11 years old, the others being over 20. Of course the numbers are not large enough to permit of an absolutely definite conclusion being drawn, but they go far to disprove Mr Hulke's hypothesis.

(*To be continued.*)

VI.—CLINICAL REPORT OF THE CASES IN THE ROYAL HOSPITAL FOR SICK CHILDREN FROM MAY TO OCTOBER 1886.

By H. A. Thomson and T. W. Dewar, Resident Physicians.

Physicians on Duty—Drs Andrew, Underhill, Carmichael, and Playfair.

Owing to the limited space at our disposal, the report is necessarily much condensed.

There were 291 cases admitted during the six months, and 62 remained in Hospital at end of April, giving a total of 353.

General Statistics.

There were 38 deaths, giving a mortality of 10·76 per cent.

In 237 cases specially examined as to previous history, 153 had had measles, 106 pertussis, and 41 scarlet fever.

In 150 cases admitted for general diseases, rickets was detected in 41, *i.e.*, 27·3 per cent.

Special Statistics.

There were 72 cases of disease in Respiratory System:—

Bronchial Catarrh, 40 cases, all of which recovered.

Pneumonia, 25 cases; one terminated fatally (catarrhal).

Pneumonia, Croupous, 7 cases; distinct crisis on or about seventh day; 3 right lung, 2 left, 2 both lungs.

Pneumonia, Catarrhal, 18 cases; 3 right lung, 3 left, 12 both lungs. One directly followed measles, one pertussis, 11 bronchial catarrh.

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[1] *Lancet*, 3rd July 1886.

Pleurisy, 6 cases (4 with effusion); all recovered.

Empyema, 2 cases. One girl of 8 died of phthisis; the other had resection of ribs, and is still in Hospital.

Bronchiectasis, 1 case, following on pertussis (detailed later).

There were 10 cases of *Heart Disease*—3 males, 7 females. In 2 of these a history of scarlet fever, in 4 rheumatism, in 1 both; no history in others. Mitral incompetence, 6; mitral stenosis, 2; combined in 2. In 2 there was slight chorea, and in 1 erythema nodosum.

Urinary System.—There were 9 cases of Bright's disease—8 acute, 1 chronic. Of the acute 6 were post scarlatinal, 1 post diphtheritic, and 1 after measles. Of these 3 died—1 of suppression of urine, 1 of pneumonia; in the third, œdema glottidis occurred, tracheotomy was performed, and death ensued in three days from catarrhal pneumonia.

Diabetes Insipidus.—1 case still in Hospital.

There were 21 cases of diseases of the *Alimentary Tract*, embracing chronic diarrhœa, 11; stomatitis, 1; tonsillitis, 3; catarrhal jaundice, 4; and two cases detailed later.

There were 15 cases of disease in the *Nervous System*, embracing epilepsy, 4 (1 petit mal); post diphtheritic paralysis, 1 of soft palate and 1 of vocal cords; infantile paralysis, 2; spastic paralysis, 1 (of lower limbs, origin unknown); chorea, 2; catalepsy, 1; tetanus, 1; somnolence, 1; chronic hydrocephalus, 1.

There were 21 cases of *Skin Diseases*, the larger number of which were eczema.

Specific Infectious Diseases, 34.—Scarlet, 2; measles, 7; typhoid, 9; typhus, 1; diphtheritic croup, 5; pertussis, 10. In 4 of the diphtheritic cases death occurred within a few hours after admission, and in 2 of the measles (1 of catarrhal pneumonia, and 1 with bubo in the axilla).[1]

Constitutional Diseases.—There were 25 cases of tuberculosis, all of which terminated fatally, several at their own homes. General tuberculosis, 4; chief seat in lungs, 11; in brain, 8; in abdomen, 2. There was a family history of tubercle in 13 of the above cases. One case of tabes mesenterica (detailed later) recovered.

There were 51 cases of what are termed strumous diseases, all of which improved under treatment, embracing ulcers of cornea, lymphatic gland and cellular tissue abscesses, diseases of bones and joints (caries of spine), etc., etc.

There were 23 cases admitted on account of rickets. In no case was cranio-tabes observed.

There were 3 cases of congenital syphilis.

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[1] These infectious cases were not diagnosed when admitted. So soon as their nature became evident they were at once sent to the Fever House, when possible.

There were 2 cases of acute rheumatism; one in a boy of 6, with pericarditis, double pleurisy, and rapid, complete recovery. No joint affection detected. The other in a girl of 8, with meningitis, endocarditis, and pleurisy. She recovered, but died five months later with convulsions. On post-mortem old meningitis over pons and medulla was found obliterating foramen of Majendie, with enormous distension of ventricles and arachnoid cavity.

Surgical Cases, 28, embracing ranula, wryneck, fractures, cellulitis of neck, acute abscesses, foreign body in larynx, burns, phymosis, talipes, flat foot, etc. Death occurred in case of cellulitis of neck, following measles, in child of 1 year.

Congenital Malformations, 2 cases. One child, 5 months, had hydrocephalus and cervical spina bifida; the other, 17 months, had an imperfectly developed brain, convolutions on cerebral hemisphere being almost entirely absent.

The following cases were specially noteworthy:—

Bronchiectasis in boy of 4, following pertussis. Temp. generally about normal. Pyrexia on several occasions from septic absorption. Fœtid breath and intermittent copious fœtid expectoration, with corresponding changes in physical signs over lungs. Improved under treatment.

Mediastinal Tumour in girl of 8. Precordial murmurs, tracheal stridor, contraction of left pupil, attacks of dyspnœa and cyanosis. Sudden death. Post-mortem, large lympho-sarcoma enveloping pericardium, and extending up trachea as far as cricoid.

Tetanus, girl of 8. Fortnight before first appearance of symptoms got small piece of wood into her foot, which remained there until admission into Hospital, when it was removed. Usual acute symptoms. Death, with hyperpyrexia.

Intussusception of Bowel, boy of 3, relieved by abdominal section seventy-two hours after appearance of symptoms, other treatment having failed. Recovered.

Septicæmia in boy of 2, following upon multiple ulcers of skin, the result of measles. Hyperpyrexia. Death.

Pyæmia in boy of 5, following acute necrosis of lower jaw. A history of decayed teeth and recent gumboil. Death, with symptoms of meningitis. Disease verified by post-mortem.

Enlarged Spleen with Anæmia in boy of 12. Vague history of five years' debility. Extreme anæmia. Uniformly enlarged spleen (8 in. in greatest diameter). No leucocythæmia nor glandular affection. General health improved under treatment.

Enlarged Liver and Spleen, boy of 2. Ascites, frequently tapped. Nature of enlargement not made out. There appeared to be tubercular glands in abdomen. Removed by parents unimproved.

Two Cases of Intracranial Tumour.—One in boy of 4. Sarcoma of cerebellum, under observation four months. The other a girl of 8, with tubercular masses in left lobe of cerebellum and floor of right lateral ventricle, accounting for localizing symptoms during life.

Tabes Mesenterica, girl of 10. Under observation nineteen weeks. Temp. ranged from 97° morn. to 101° or 102° even. Pulse and resp. elevated. Constipation at first, then diarrhœa. Temp. a little up in evening when removed by parents, but had gained 11 lb. in weight.

The remaining cases were comparatively unimportant.

VII.—THE TOPICAL TREATMENT OF TUBERCULAR PHTHISIS.

By J. Lindsay Porteous, M.D., F.R.C.S. Ed.

The researches of Koch and others demonstrate that bacilli are found in larger or smaller numbers in all forms of tuberculosis; and further, that some idea of the extent of the phthisical process could be determined by the number of bacilli.

It was found that the bacilli were most abundant where there was recent caseous infiltration, and in the interior of cavities of walls undergoing rapid softening. When the walls of cavities were firm and indurated the bacilli were few in number. There were fewest in the cicatricial contracting and pigmented lung tissue.

By examining the sputa of a phthisical patient much light may be thrown on the condition of the lungs. We may surmise that the fewer the bacilli the less the destruction, and *vice versa*. Believing that bacilli are the cause of phthisis, some mode of destroying these would surely be a great boon to mankind, especially when we know that one-seventh of the population die from this disease.

Many bacillicides have been recommended. Amongst them is corrosive sublimate; and this is what I have, in my few experiments, found to be the best. Various modes have been suggested of applying the remedies. For example, by inhalation of steam saturated with the substance used, by inspiring air which has passed through a sponge soaked in the bacillicide, or by the inhalation of spray containing the bacillicide. The latter I find is the most effectual, as it gets most directly to the part affected, and retains the original strength of the solution. I am aware that this has been disputed, but from the experience I have had of it I am inclined to believe that it is the case.

I have procured a small finely-dividing spray-producer, with a reservoir graduated or made to hold the exact quantity required to be inhaled at one sitting. I order the reservoir to be filled with a solution of corrosive sublimate, and direct the patient to deeply inspire at the same time that the ball of the vaporizer is squeezed. By these means the vapour is drawn directly into the lung, and is in no way diluted before reaching the part affected. This process is repeated every four or six hours, according to circumstances. It is very necessary that the spray is minutely divided; if not, it causes an uneasy sensation in the throat, accompanied by coughing, or even vomiting. A little practice on the part of the patient makes him very proficient, and no inconvenience is experienced. The result of this mode of treatment has proved excellent, and quite beyond my expectation.

I give particulars of two cases of pulmonary phthisis and one of laryngeal phthisis.

On 1st April last year I was called to see J. D., age 20, a railway porter; height, 5 ft. 11 in.; broad shouldered, fair complexion, and a powerful-looking man. He told me that about the end of February he felt very weak and unable for his work; that for some weeks prior to that time he began to cough; and that he still had, when I visited him, a severe cough, especially in the morning. At the time the cough commenced he used to perspire freely in bed—so much so that his night-clothes were quite damp when he awoke. At the beginning of March he spat blood (which continued up to the second week of April). He consulted a doctor in Glasgow, who told him one of his lungs was affected, and ordered a blister to be put over apex of right lung, and cod-liver oil given thrice daily. He gradually became weaker, and returned home. His family history shows that one brother died of phthisis, also an aunt on his father's side, and that another brother had a pulmonary abscess, ending in phthisis and death at 25 years of age. On examination I found dulness over right apex, crepitation, increased vocal resonance, and tubular breathing. His breathing was short, and the effort of speaking caused much coughing. Pulse, 110; temp., 102°; weight, 11 st. 12 lb. He vomited everything he took. His weakness was great, and the night sweats profuse. I ordered the cod-liver oil to be stopped, and gave him a solution of corrosive sublimate, of which one drachm was to be inhaled by means of spray-producer every four hours, and butter milk *ad libitum*. When I visited him two days afterwards he informed me that he did not spit so much blood, that the vomiting had nearly left, and the cough was not so troublesome. Pulse, 104; temp., 100°. On each succeeding visit I found improvement, and by the 13th of May the cough and spit had all but disappeared, and the sounds became less abnormal. His appetite improved, and he could go about a little. The inhalations were continued till the end of May. At the end of the first week of June he resumed his work as a railway porter. On the 25th of June he wrote to me as follows:—"I have no cough, my appetite is good, and I feel quite as strong as ever I did, and my weight is 13 st.—one pound heavier than ever I was."

CASE II.—M. R., age 20, domestic servant. All the family history that I can find out is that two aunts died of phthisis.

Personal Statement.—Says that she was seized with a severe cold towards the end of 1885. Her cough became very troublesome and the spit so copious, along with a feeling of lassitude, that she consulted one of the physicians in the Edinburgh Royal Infirmary in February 1886. She was told that her right lung was affected, and was ordered to paint above and below clavicle with Tr. iodi. and take cod-liver oil. On March 1885 she weighed 8 st. 7 lb.; November 1885, 8 st. 3½ lb. Her menses left in December of 1885. When I visited her on 26th February she was too weak to be weighed. She complained of great prostration, very troublesome cough, and expectorated large quantities of a clear, stringy substance, sometimes mixed with a little blood. Her breathing was short, and perspiration profuse. There was a pain in her right side and below right clavicle. She said she had lost flesh, and had persistent vomiting; even cold water could not be retained. On percussion I found dulness over right apex, spreading a short way downwards. Auscultation revealed prolonged expiration, harsh inspiration, increased vocal resonance, and there was lessened mobility below clavicle. Her temperature was 104°. I ordered picrotoxine in pill for sweating at bedtime, and a mixture of dilute hydrocyanic acid and bismuth for the vomiting. The former, although very successful in many cases, did not lessen the sweating, and the latter did not relieve the vomiting. I therefore stopped them both, and ordered solution of corrosive sublimate to be used as a spray as in Case I. At the end of forty-eight hours, or after twelve applications of the spray, she complained of a great quantity of saliva flowing from her mouth. I ordered alum to be used as a wash, and the solution to be used every six hours instead of four. This had the effect of stopping the salivary flow, and at the end of the third day the vomiting ceased, the sweating became less profuse, and the cough much modified. She continued daily to improve, and by the end of a month could sit up a short time and take a moderate amount of food. Her weight on 12th March was 7 st. 6 lb.; on 20th April, 7 st. 9 lb. She went on rapidly improving, got good sound sleep without sweating, and gained flesh and weight. On the 17th of May she turned the scale at 7 st. 13 lb.; and when weighed on the 15th of June she was 8 st. 5 lb. The last time I weighed her was on the 8th of July, when she reached 8 st. 8 lb., and had been able to walk four miles without feeling any fatigue. This case had nothing in its favour, but the reverse. Her family is poor, and number ten, including parents. They live in two small rooms on the ground floor of a house situated at the foot of rising ground, making the house very damp. The patient slept in a kitchen where five other members of the family slept. I saw the girl on the 20th of this month (February 1887). She said she felt very well, had no cough, and was looking out for a housemaid's place.

CASE III.—M. Y., age 24, consulted me for hoarseness on the 28th of January of this year. Her father and several brothers and sisters had died of phthisis, and she had been treated for some months for laryngeal phthisis. When I saw her she was suffering a good deal of pain in her throat, want of appetite, and great night sweating. I ordered the spray, as in the other cases, and in the course of a week the hoarseness began to disappear, the sweating became less profuse, and the appetite improved. She was able to get out of bed and do a little house-work; and on the 18th of this month (February) she could speak very clearly, and was able to take a short walk. She still continues the treatment, and I hope before many weeks are past she will be able for her usual duties.

From my experience of cases treated as above described, I am very sanguine that many cures will yet be effected; but it is very necessary that the treatment should commence early, that it should be thoroughly done, and not by fits and starts. I admit that I have had failures, but they were failures only because the patients were either too far advanced in the disease, or were careless in attending to the instructions I laid down for their guidance.

VIII.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By Byrom Bramwell, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh.

XIII. *The Differential Diagnosis of Hysteria and Intra-cranial Tumours.*

Hysterical symptoms are not unfrequently met with in the course of cases of intra-cranial tumour, and, indeed, in all forms of organic cerebral disease; and in some cases, in which the symptoms and signs of hysteria are prominent and the ordinary symptoms and signs of the organic lesion, with which the hysteria is associated, are ill developed, the differential diagnosis may be a matter of extreme difficulty. Indeed, in the earlier stages of some cases it may be impossible to come to a positive conclusion.

In dealing with cases of this description, it is essential to remember that the diagnosis of mere hysteria (nothing more than hysteria) is never justified unless the observer has, by the most careful examination, and by repeated observation, failed to detect any symptoms and signs indicative of organic disease.

The condition of the optic discs is without doubt the most important point in clearing up the diagnosis. If ophthalmoscopic examination shows the presence of double optic neuritis, the doubts and difficulties of the case are at once removed, for double optic neuritis is very rarely, if ever, associated with mere hysteria, but is very frequently, indeed generally, associated with cerebral tumours.

It will be observed that I do not say double optic neuritis is *never* associated with mere hysteria. For not only would such a dogmatic method of statement be, in my opinion, highly unscientific, but I am personally disposed to think would, as a matter of fact, be in this case absolutely erroneous. Double optic neuritis *is* sometimes met with in anæmia, in association with derangements of menstruation, in connexion with errors of refraction, and other conditions,[1] in which there is no "coarse" intra-cranial lesion, and with which hysterical symptoms are not unfrequently associated. I am therefore prepared, sooner or later, to meet with a case of apparently mere hysteria, in which double optic neuritis is present. Further, we are still largely ignorant, on the one hand, of the exact pathology of hysteria and hysterical symptoms (hysterical paralysis, hysterical contracture, hysterical anæsthesia, etc.); and, on the other, the exact mode of production of the double optic neuritis which is associated with many intra-cranial lesions is still a matter of dispute. Now, in the presence of such ignorance it would, in my opinion, be rash and unscientific to affirm that the same (?) functional alterations which produce hysterical paralysis, hysterical contracture, or hysterical anæsthesia, *cannot* possibly cause such vascular alterations in the fundus as will result in the production of some degree of œdema and swelling of the optic papilla. My own view, however, is that papillitis is not at all likely to be produced in this way. I am of opinion that the papillitis which is so frequently associated with cerebral tumours results, in most cases (in a way which I need not now describe), from increased intra-cranial pressure; and I see no grounds for adopting Dr Hughlings Jackson's theory, that the papillitis is the result of a vasomotor alteration (at the periphery) produced by the lesion in the centre (the intra-cranial tumour).

Personally, therefore, I am disposed to think that the (?) functional changes which produce hysterical paralysis or hysterical contracture are not in the least likely to produce double optic neuritis. But, while holding this view, I cannot, for the reasons given above, dogmatically assert that double optic neuritis is *never* associated with mere hysteria alone.

But be that as it may, double optic neuritis is so rarely, if ever, met with in connexion with mere hysteria, and so frequently met with in cases of intra-cranial tumour, that its presence in a case in which the diagnosis lies between hysteria and cerebral tumour practically settles the question, and by the practical physician may be taken as a definite indication that the case is not one of mere hysteria alone.

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[1] The experience of any single observer is necessarily so limited, and even the knowledge which can be acquired by making one's self familiar with the accumulated experience of authorities is, when compared with the facts and possibilities of nature, so imperfect, that I question whether such terms as *never*, *cannot*, and the like, should ever be used in an unlimited and unqualified sense. It is, of course, quite another thing to use these terms in a limited and qualified sense, and to say, *so far as I know*, or *so far as is known*, such and such symptoms *never* occur or *cannot* occur in connexion with such and such affections.

And here I would briefly emphasise the importance of the use of the ophthalmoscope in the diagnosis of cerebral (and, indeed, of many other) affections. It is not too much to say that the ophthalmoscope is just as important in the diagnosis of some nervous affections as the stethoscope is in the diagnosis of many cardiac and respiratory diseases. The routine use of the one is just as necessary, if mistakes are to be avoided, as the routine use of the other: for just as some serious cardiac affections—aortic regurgitation, for example—may be unattended by symptoms, but are readily detected on stethoscopic examination, so the double optic neuritis, which is easily enough seen in most cases by means of the ophthalmoscope, may be unattended with any alteration of visual acuteness, or, indeed, any limitation even of the field of vision.

But while the ophthalmoscope enables us to clear up the diagnosis in those cases in which double optic neuritis is present, and to come to the practical conclusion that the symptoms are not merely due to hysteria, but that there is organic disease, it does not enable us to make a differential diagnosis in all cases.

It must be remembered that double optic neuritis is by no means always present in cases of intra-cranial tumour. When, then, the ophthalmoscopic examination is negative, we are still left in difficulty and doubt.

In cases of this description, the severity of the headache is a point of some importance. Purposeless vomiting, too, especially when it occurs first thing in the morning, or is apparently due to alterations in the position of the head, is a symptom highly suggestive, though not by any means certainly indicative, of organic disease. Localized epileptiform convulsions, or a distinct epileptic fit, are strongly suggestive of organic disease. Localized paralysis of the cranial nerves is of the greatest diagnostic value, for while paralysis of the limbs is not uncommon in connexion with hysteria, paralysis of the face is rarely observed even in hysterical hemiplegia; and isolated paralysis of muscles supplied by motor cranial nerves, such as the facial, is very rarely, if ever, hysterical.

In doubtful cases, a careful study of the distribution of the paralysis, the state of the reflexes, and, indeed, of the whole nervous system, together with a careful consideration of the progress and course of the case, will generally enable the physician to decide whether the case is merely one of hysteria, or whether, in addition to the hysterical symptoms, there is not some underlying organic disease.

One of the most striking cases, which has yet been published, illustrative of the difficulty that there sometimes is in distinguishing hysteria and intra-cranial tumour, was reported a few years ago by Dr A. Hughes Bennett.

The case is of such interest and importance that I make no apology for quoting a large portion of Dr Bennett's report in full:—

CASE 1.—*Dr A. Hughes Bennett's Case of Cerebral Tumour, with Symptoms simulating Hysteria.*

The patient, a young lady, aged 16, precocious as regards the development both of body and mind, whose father, brother, and sister were markedly neurotic in character, consulted Dr Bennett on 1st April 1876, complaining chiefly of blindness, imperfect hearing, and loss of power in the lower extremities. Her mental condition had always been peculiar; she had exhibited marked erotic tendencies; "on several occasions she had been detected in more than equivocal relations with men, and it is stated that she was at least on one occasion overheard making indecent overtures to her own brother. She had been expelled from a Grammar school in Germany, the offence being so bad that her schoolmistress declined to give an explanation for her dismissal, and her parents, knowing her habits, did not press for a reason. Subsequently she went to a school at a fashionable watering place near London, where her conduct was characterized by general misconduct. At various times she had fits of laughing and crying, and irregular movements associated with a nervous attack. In October 1875, and while apparently in good health, she declared that she had become completely blind. As this occurred immediately after correction for mutinous conduct, and as she had got the reputation of being extremely cunning and wilful, the schoolmistress and others thought she was malingering. A medical man called in stated that he could find nothing the matter with her. Some few days afterwards she completely recovered her sight. This still further seemed to indicate that her alleged complaint was either intended or imaginary. She spent her Christmas holidays at home, accompanying her family to evening parties, etc. She was then seen by a London physician, who stated that she was hysterical, and who ordered strict moral control and cold baths. On returning to school, which it seems she disliked, she again stated that she had become perfectly blind, and in addition deaf. She continued for some weeks in this condition, when her hearing became completely restored, but the blindness remained. She was attended at different times by several practitioners, who agreed that the symptoms were of an emotional or imaginary nature, and that the patient was hysterical, and they ordered appropriate treatment. About February 1876, she stated that she very rapidly lost the power of her lower limbs, and that she could not walk. This, it was supposed, indicated her desire to avoid the daily walks which she disliked, and to have drives instead; with this also the deafness returned. In this state she continued till 1st April, when I saw her for the first time.

"The condition of the patient was then as follows:—A tall, full grown, highly developed, healthy-looking young woman. She stated that she was quite blind in both eyes. A variety of methods were tried to test this, but without any definite results. The pupils were both widely dilated, and very sluggish in their movements. On ophthalmoscopic examination, with the exception of the vessels of both discs being very slightly congested, the appearances were normal. She also stated that she was completely deaf in the right ear and partially so in the left one, so that we had to talk loudly to be heard. I observed, however, that on some days she could hear perfectly well. Examination of the ear revealed nothing. She complained of slight weakness in the lower limbs, and that she could walk only with the greatest difficulty. On examining them they were found of good muscular development. When lying on her back motion and sensation seemed perfect, but at times there was hyperæsthesia of the skin of the legs. When she walked she staggered and moved about awkwardly, and stated she felt as if her legs gave way under her. There was no tenderness or abnormal condition of the spine. She stated that she suffered frequently from severe headaches in the occiput, which, however, were not constant, and lasted only a few hours at a time. The memory and intellect of the patient were in no way affected. She described all her symptoms with the greatest minuteness and exactitude. She had that manner of exaggerating her ailments so common in nervous persons. She cried out if her foot were touched, but if her attention were taken away from it, firm pressure could be made without causing her to wince. The pulse was 100. The extremities were cold and blue. Temperature normal. Tongue slightly furred. Bowels constipated. Appetite good. She had not menstruated since her illness commenced. Otherwise all the systems were normal. On subsequent examination there was abundant evidence that masturbation was practised to a very great extent.

"The diagnosis being uncertain, no active treatment was adopted. General hygienic and dietetic measures were suggested till the case had been further observed. The above conditions remaining, an eminent London physician saw the case with me. He came to the conclusion that it was one of aggravated hysteria, and gave as his opinion that little was to be done except placing her under judicious moral control. A respectable and experienced nurse was engaged to look after her under my direction, the patient remaining at home. There was no special medicinal treatment except occasional simple domestic remedies. She in no way improved. Every now and then she had attacks lasting from one to three hours, which had all the appearances of hysterical fits, involving shouting, laughing, crying, throwing herself about, striking the nurse, etc. On 15th April, her blindness remaining as before, she stated that her deafness had so increased that she could only hear with the greatest difficulty. The nurse said that at times she could hear quite well. She could now hardly walk, and could only with difficulty crawl from one room to another with assistance. On four or five occasions another physician[1] saw her with me, and after considering her condition from every point of view, he was of opinion that it was a case of hysteria. On 25th April she became restless and greatly excited, chiefly at night, and frequently alarmed the household by crying out and getting out of bed. Change of air and scene were judged desirable, so she was boarded in a private house in the suburbs of London. The excitement continued to increase, till on the 28th there were wandering and delusions. She was now totally blind, deaf, and could not stand or move her limbs. She did not know anyone, and passed the contents of the rectum and bladder in bed. Her appetite failed; she complained of violent headache; her pulse was 140. Temperature could not be ascertained. On 1st May she became unconscious and wildly delirious, raving chiefly about some faults she had committed at school, about babies and their birth, tying the umbilical cord, etc. Pulse, 150. These symptoms continued till the 4th, the patient becoming gradually weaker. In the afternoon she appeared quieter; and at my visit, about 5 P.M., I found her seated in an armchair at the fire. It was obvious she was very feeble. Shortly after this she became suddenly comatose, and in spite of every effort to support her strength with nutrients and stimulants, she gradually sank at about 2.45 A.M. next morning.

"At the autopsy, which I had the greatest difficulty in obtaining, Dr Robert Lee kindly assisted me. We found the body well nourished, and all the organs healthy except the brain. On removing the calvarium, the pia mater was found deeply congested, and scattered over its surface were found five or six tubercular-looking bodies about the size of small millet seeds. The vessels on the surface were greatly engorged with blood. On removing the cerebral lobes in thin slices, a tumour was discovered in the right hemisphere. On further manipulation this mass was found to be about the size and shape of a hen's egg, of a dark translucent colour, and of nodulated appearance. It was of soft consistence, highly vascular, and on its surface were small extravasations of blood. It occupied the medullary substance of the middle lobe superior to the lateral ventricle, with the cavity of which it did not communicate, although it caused a marked bulging of its roof."[2]

Several cases have come under my own notice in which this same difficulty in diagnosis occurred. Two of the most striking are as follows:—

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[1] Who, like Dr Hughes Bennett himself, was one of the first authorities in Europe on nervous diseases.

[2] *Brain*, vol. i. p. 114.

CASE 2.—*Organic Cerebral Disease, presumably a Tumour pressing upon the Motor Strands of the Internal Capsule, in which the difficulty of making a differential Diagnosis between "Coarse" Organic Disease and Functional Derangement was considerable.*

Miss A., æt. 38, was seen twice during the early part of 1885 with Dr Struthers, to whom I am indebted for the notes of the early history of the case.

Some five years before I saw her she began to complain of neuralgia affecting the upper and middle branches of the fifth nerve on the left side. This neuralgia, which varied much in its severity, but never entirely left her for any length of time, was followed by pain in the left side of the head, and later by occasional pain in the left arm and left side of the neck. During the year 1882 the gait became reeling, and there was inability to stand with the eyes shut, and nausea. In 1883 clonic tremor on movement was noticed in the left arm, and subsequently, but to a much less extent, in the left leg. At this time the knee-jerk was exaggerated on both sides, but especially on the left, and ankle clonus could occasionally be elicited in the left leg. During the years 1883 and 1884 the headache gradually became more severe, with exacerbations which were accompanied by gastric pains, vomiting, and diarrhœa, these paroxysms lasting for a couple of days. The left arm and left leg were now distinctly weaker than the right, and the patient complained of pain when these parts were moved. On more than one occasion she tumbled, and was found lying on the floor of her room; but it was doubtful whether she was on these occasions unconscious or not. Six weeks before I saw her she had had an attack of sciatica in the left leg, for which she had remained in bed. For eighteen months her voice had been weak and whispering, but was temporarily restored under emotion and excitement. The vocal cords were thin and pale, but acted symmetrically. Vision was stated to be impaired, but no changes in the fundus were detected on the single occasion on which ophthalmoscopic examination was permitted. The handwriting, until shortly before my visit, had been unaltered. The intellect was unaffected, but the patient, who was naturally peculiar, had gradually become most obstinate, self-willed, and intractable. It was with great difficulty that she could be persuaded to get out of bed, to wash herself, or to interest herself in her surroundings. The nurse stated that on one occasion she had noticed the face drawn to one side.

The result of my examination was simply to corroborate the account which has been given above. The optic discs were found to be quite healthy, and, so far as could be tested by rough examination (without a perimeter), there was no limitation of the visual field in any direction. The other special senses and the tactile sensibility of the skin seemed normal, but the patient made complaint of considerable pain when the left arm and the left leg were moved, more especially in the left hip-joint, which appeared, however, perfectly natural. Pain and tenderness on pressure were also complained of in the left side of the head. The patient was with difficulty persuaded to get out of bed, to stand, and walk across the room. All these actions were performed feebly, but there did not appear to be any localized leg paralysis. The knee-jerk on both sides was exaggerated, but ankle clonus could not be elicited. Movements of the left arm were attended with a marked rhythmical tremor, and were distinctly weak. The bladder and rectum were normal. The urine had on two occasions contained a small trace of sugar, but was now quite healthy. The mental condition of the patient was obviously most peculiar. She spoke in a low whisper, and it was with difficulty that she could be persuaded to answer the questions which were put to her. This appeared to be the result of obstinacy and mental perversion, and did not appear to be due to any lack of comprehension.

The pelvic and all the other organs were normal.

The patient continued in much the same condition for some months; then acute cerebral symptoms with high temperature suddenly developed, and death speedily followed.

A *post-mortem examination,* unfortunately, was not obtained, for the patient (who lived by herself, and was independent), anticipating our wishes in this respect, had expressly stated in her will that the body was not to be examined.

In the next case, in which the hysterical symptoms were apparently the first indications of commencing cerebral disease, a correct diagnosis was quite impossible, for there was absolutely no indication whatever of organic brain disease.

CASE 3.—*Amputation of the Breast for Malignant Disease; Hysterical Convulsions without any other Nervous Symptoms; subsequent slow development of Paralysis and Coma; Cancer of the Cerebral Dura Mater.*

Some little time ago I was asked by Dr Keith to see a middle-aged lady suffering from convulsions. Eight days previously the patient's breast had been removed for malignant disease (cancer); the progress of the wound was in every way satisfactory, but on the evening of the seventh day general convulsive twitchings of the head, trunk, and extremities had developed.

When I saw the patient, some twelve hours after the commencement of the spasms, the temperature was normal, and the pulse between 90 and 100. The patient was quite conscious, and, with the exception of the spasms, there were absolutely no other signs whatever of nerve disease. The attack had come on without any emotional excitement or other apparent cause. The spasms, which were very violent, and which had continued uninterruptedly for twelve hours, consisted of rhythmical too and fro jerkings in an antero-posterior direction of the head on the trunk, and of symmetrical clonic contractions of all four limbs and of the muscles of the back and abdomen. The patient was lying flat on her back, and the lower extremities were extended. On inquiry into the history, it was ascertained that the patient was naturally of a sober and unemotional temperament, and that she had not complained of headache, sickness, or other cerebral symptoms. She had, however, some two years previously, while staying in a Continental hotel, got up through the night, and alarmed her friends and the household by screaming; for this attack no cause was ascertained.

The diagnosis which was formed was that the convulsions were hysterical. The patient was firmly spoken to, and told that she could and must control the spasms; that if she did not do so the wound would probably break open, and her recovery would be interrupted, or, perhaps, altogether prevented; and a mixture containing chloral hydrate and bromide of potassium was prescribed.

Under this treatment the spasms quickly subsided; the patient made an uninterrupted and speedy recovery, and in the course of a few days went home apparently quite well.

Some weeks later I learned from Dr Skene Keith that paraplegia had developed. I naturally, though as the result proved erroneously, concluded that the paralysis, like the convulsions, was functional in character.

The subsequent course of the case and the report of the post-mortem examination is copied from a letter, which Dr Keith received from the family physician, and which he kindly forwarded to me:—"Miss —— died comatose on the 18th inst. She gradually became more and more paralyzed: one faculty after another—memory, language, deglutition, and, finally, respiration becoming more difficult. I requested and got a post-mortem. We only examined the spinal cord and the brain. In the cord (the lower half only was examined) there was no trace of any morbid appearance, nor in its coverings. In the cranial cavity—1st, The membranes were adherent to each other, and the dura mater to the calvarium along the margins of the longitudinal sinus, for about two-thirds of the whole extent from behind forwards; 2nd, The substance of the brain was perfectly normal, and no appearance of disease in the membranes at the base was observable; 3rd, The adhesion of the membranes to each other at the part referred to, on minute examination, was found to be due to infiltration of warty-looking substance, which was found also in the choroid plexus in both lateral ventricles infiltrated in similar manner, and this substance showed under the microscope cells of multinuclear structure and of nested character in the meshes of the connective tissue. I have no doubt this had begun before the operation, and that the result was in no way affected by the operation."

Part Second.

REVIEWS.

Listerism: its Past, Present, and Future. By G. GRANVILLE BANTOCK, M.D., F.R.C.S. Edin., President of the British Gynæcological Society. Being an Inaugural Address delivered before that Society. London: Spottiswoode & Co.: 1887.

THOSE who have followed the frequent discussions on the value of Listerism in abdominal surgery, which have taken place from time to time in the medical journals, will readily understand the position taken up by Dr Bantock in the address before us. It has always appeared to us—and a perusal of the address does not lessen the feeling—that the opponents of Listerism are really only opponents of carbolic acid and the spray; and that while both sides have lashed themselves into fury over this part of the question, all sight has been lost of the fact that, if not all, at any rate an enormous amount of the attention which is now paid to cleanliness—the great boast of non-Listerians—owes its existence to the work of Lister.

Undoubtedly, behind this there is the whole question of the origin of septic poisoning. In regard to this Lister has his theory, which his opponents, while constantly having side-hits at, are rarely sufficiently bold to stand up and contradict *in toto.* On the contrary, in view probably of the present increasing knowledge in regard to the *rôle* of bacilli and bacteria in the production of disease, they show a tendency tacitly to admit the position. The whole fight, then, seems to be over the unfortunate—we may call them—methods which Lister introduced to combat these germs; and if we inquire as to who started the fight and introduced the acrimony, we shall find that it was the intense fanatical enthusiasm of the Listerians which really was at the bottom of it. To borrow from Dr Bantock, who in his turn borrows with slight alterations from Froude—"Listerism has been a creed, while it pretended to be a science. Science rests on reason and experiment, and can meet an opponent with calmness. A creed is always sensitive. To express a doubt of it shakes its authority, and is therefore treated as a moral offence."

We would, therefore, recognise this paper not as on Listerism, but as on "The Spray and Carbolic Acid as Elements of Listerism: their Past, their Present, and their Future."

Looking at the address in this light, we are struck first with the truth of the remark just quoted, that Listerian details have been accepted as a creed, and that their sensitive supporters have treated as a moral offence any expressions of doubt in regard to them. Dr Bantock collects together instances of legal prosecution and punishment in Russia, Austria, and Germany against those who have "neglected Listerian precautions," and then devotes a large part of his space to an account of a much more deadly form of persecution to which he himself was subjected—the use of the blackball. At the time, those who professed to "know all about it" shook their heads, looked grave, and hinted mysteriously that there was another reason altogether; but that is one of the little ways that blackballers have. Let us hear how Dr Bantock describes the occurrence: "That I suffered (professionally) I am free to confess. And what think you was the first visible effect? The President of the Royal Medical and Chirurgical Society of that time, viz., Mr Erichsen, thought I ought to belong to that Society, and under his ægis I allowed myself to be nominated for the fellowship. I was supported by the cream of the surgical branch of the profession in that application, and it is humiliating to think that the united voice of those men was of so little weight that I was twice rejected."

Further, according to the writer, he suffered also at the hands of his competitors in the department of ovarian surgery from the way that they presented, or, as he shows, misrepresented the results of his practice at the Samaritan Hospital. Into the details of this matter we shall not enter; suffice to say, that in the pamphlet before us Dr Bantock asserts his position in a way that will be difficult to gainsay, and that the honesty of his style and statement, along with the hardness of his facts, cannot fail to carry conviction to any impartial reader.

But Dr Bantock, though he devotes the most of his space to his own work and his own results, does not confine himself to them, but brings forward such an array of facts and arguments from the work of others that on laying down the pamphlet one feels forced to echo the words of Professor von Bruns of Tübingen, who was among the first to raise the battle-cry against the terrible paraphernalia of the antiseptic system as far back as 1880,—*Fort mit dem Spray*, and to add, The spray is played out.

A Practical Treatise on the Cure of Consumption, with Medicinal, Dietetic, and Hygienic Remedies. By JAMES WEAVER, M.D., L.R.C.P., etc. London: J. & A. Churchill: 1887.

THIS treatise is written for the general public, not for the profession; and it is very probable that the gullible portion of the public suffering from lung affections may learn to its cost that the author writes upon a subject which he does not understand. His title-page is adorned by four lines from Tennyson, the first of which is—

"Read my little fable,"

and after reading its ninety-one pages, there can be no doubt that the author accurately describes his production as a "little fable." Quotations might be given to show the artifices which Dr Weaver uses to draw ignorant and credulous invalids into his net, but they are so commonplace that we spare our readers any further notice of a treatise which condemns its author as a person of whom the profession to which he belongs is not likely to be proud.

A Text-Book of Pathological Anatomy and Pathogenesis. By ERNEST ZIEGLER, Professor of Pathological Anatomy in the University of Tübingen. Translated by DONALD MACALISTER, M.A., M.D. Part II., Special Pathological Anatomy, Sections 9 to 12. London: Macmillan & Co.

THIS is the third and final portion of the translation of Professor Ziegler's work on Pathological Anatomy, which has been anxiously looked for by the English reading student of medicine for some time. The subjects here treated of are the various pathological conditions which affect the urinary organs, the respiratory organs, and the nervous system, and the consideration of the whole, as we think has been said before, redounds to the credit of both the author and translator. Each pathological change is discussed, some it may be shortly, but all in a manner which is to the point, no verbosity of language or reiteration being indulged in; moreover, the information is brought down to date, which in a great manner compensates for the delay in the issue of the volume. Even from our rather rapid perusal profit has been derived, and we cannot at present call to mind any important points or subjects which have been omitted, or fail to be treated of, and believe the work, as now completed, fills a gap on the shelves of the pathologist's library. It is well indexed, and the bibliography to the very end is apparently complete, in itself a valuable thing. The remarks of the editor, which occur frequently throughout the pages, give many references, and make more clear, or recall to the mind, points bearing upon the subject under review, which may not be specially noted by the author. The illustrations are almost all excellent, are in considerable numbers, and assist in the perusal of the letterpress.

Dr Macalister deserves the thanks of the profession for his translation of Professor Ziegler's work, and upon the completion of which we congratulate him.

Gout and its Relations to Diseases of the Liver and Kidneys. By ROBSON ROOSE, M.D., F.C.S., Fellow of the Royal College of Physicians of Edinburgh. Third Edition. London: H. K. Lewis: 1887.

THE appearance of three editions within eighteen months must be held as sufficient evidence that this work has proved of use, and we may safely leave it with the credentials of past success as the best promise of future service.

Massage as a Mode of Treatment. By WILLIAM MURRELL, M.D., F.R.C.P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital. Second Edition. London: H. K. Lewis: 1887.

A SECOND edition of this useful little book has already been called for. This is the best proof that it has proved to be of service in pointing out the nature and results of massage.

On Aphasia: being a Contribution to the Subject of the Dissolution of Speech from Cerebral Disease. By JAMES ROSS, M.D., LL.D. Aberd., Fellow of the Royal College of Physicians of London, and Senior Assistant Physician to the Manchester Royal Infirmary. London: J. & A. Churchill: 1887.

DR ROSS has conferred a great benefit upon the medical profession by republishing his papers in a form accessible to every one. Both from a clinical and theoretical point of view they are of the highest interest. The careful description and analysis of the symptoms in the various forms of aphasia will be perused with profit by the reader; but it is in the concluding portion of the work—that devoted to the elucidation of the connexion between the symptom and the lesion—that the author is at his best. We cannot enter fully into the matter, but we may state that he argues very ably in favour of motor aphasia and agraphia being forms of motor paralysis not accompanied by loss of memory of words, while he regards sensory aphasia as being caused by a sensory paralysis.

Dr Ross states his "disbelief in the possibility of parcelling out the nervous structure in the cortex of the brain, the activity of which is the correlate of the process of thought, into distinct centres, each having a separate faculty, such as naming, ideation, and propositionising." In his discussion of this and allied matters, he severely criticises the views of Broadbent as being the "highest exponent" of "a school of psychologists which manifests a tendency to break up the human mind into numerous faculties, with their corresponding cortical centres."

As one of the most philosophical writers on nervous diseases, the author's opinions are entitled to the most respectful and careful attention of the profession, and we have not the slightest doubt that these pages will be received with as much appreciation as his former volumes.

The Action and Uses of Digitalis and its Substitutes, with special reference to Strophanthus. By THOMAS R. FRASER, M.D., F.R.S., F.R.C.P. Ed., Professor of Materia Medica and Clinical Medicine in the University of Edinburgh. London and New York: Burroughs, Wellcome, & Co.: 1886.

THIS is a *reprint* from the *British Medical Journal* and *Lancet* of a paper read by Professor Fraser at the Annual Meeting of the British Medical Association in Cardiff in 1885. It contains also the discussion on that paper, and the profession are under a deep debt of gratitude to the publishers for giving in pamphlet form what is now known concerning Strophanthus, which is destined to become one of our most valuable drugs. We strongly urge all practitioners to study carefully Professor Fraser's valuable paper, feeling confident that every member of the profession ought to know how and when to use Strophanthus.

What to do in Cases of Poisoning. By WILLIAM MURRELL, M.D., F.R.C.P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital, etc. Fifth Edition. London: H. K. Lewis: 1887.

WE are glad to see that this deservedly popular work has reached a *fifth* edition. It shows very clearly the need of such a volume as Dr Murrell has produced. We have on a former occasion expressed our high appreciation of the value of Dr Murrell's work on Poisons, and have now only to add that with each succeeding edition the work becomes more valuable. It is not, however, yet perfect. With sulphate of zinc and apomorphine in your "Antidote Bag and Case," there is no need for *ipecacuanha* in the same bag, an emetic which is always slow in its action, and to a certain extent depresses the heart. At page 33 it would be an improvement if tartar emetic and antimonial wine were omitted from the list of *emetics* that may be used in cases of poisoning.

Short Contributions to Aural Surgery. By Sir WILLIAM B. DALBY, F.R.C.S., M.B. (Cantab.), Aural Surgeon to St George's Hospital. Republished from the *Lancet* between 1875 and 1886. London: J. & A. Churchill: 1887.

WE have here a series of brief notes of what seemed to the author at the time worth recording out of the cases which were seen in his daily practice, and tend to show, *e.g.*, the exaggerated importance which had been given to alterations in the tympanic membrane as affecting hearing rather than to the disorganization beyond the membrane, the effects on hearing of some remarkable emotional influences, the removal of adenoid growths from the pharynx, etc. Under the eleven chapters we have marked by periods the time during which these notes appeared, when accepted views in regard to diseases of the ear and their treatment became to our author modified in some instances and changed in others. We are glad to have these notes collected together and printed in the large type in which they are, and would have been better pleased had the consideration of those cases in which the perforation of the mastoid cells is necessary been included. They are to be found in the *Med.-Chirurg. Trans.*, vols. lxii. and lxviii. We wish a wide circulation to Sir William's latest work.

The Diseases of the Ear and their Treatment. By ARTHUR HARTMANN, M.D., Berlin. Translated from the Third German Edition by JAMES ERSKINE, M.A., M.B., Surgeon for Diseases of the Ear to Anderson's College Dispensary, Glasgow, etc., etc. With Forty-two Illustrations. Edinburgh: Young J. Pentland: 1887.

THIS is an admirable translation of Dr Hartmann's work, and reflects credit alike on the translator and publisher. It is well that we should be able to study the works of German authors in our own familiar tongue, as they appear, sometimes at least, to have a different object in view for writing a book on Diseases of the Ear than some of our English writers. The book in its English garb deserves to be widely known.

The Retrospect of Medicine. Edited by JAMES BRAITHWAITE, M.D. Lond. Vol. XCIV. July–December 1886. London: Simpkin, Marshall, & Co.: 1887.

The Year-Book of Treatment for 1886. London: Cassell & Co., Limited.

The Medical Annual and Practitioner's Index. Edited by PERCY WILDE, M.D. Bristol: John Wright & Co.: 1887.

THESE retrospects do not call for a lengthy notice. Braithwaite's is an old-established favourite, and is likely to continue so in spite of the many claims of its younger rivals to the attention of the profession. The volume before us is as carefully edited as any of its predecessors. Cassell's *Year-Book of Treatment* has several new names in its list of contributors, among them being Drs Berry Hart and M'Bride. The advantages of having a number of contributors are obvious, but that there may be corresponding disadvantages is shown by the fact that many subjects are noticed twice or oftener. Thus, intubation of the larynx as advocated by O'Dwyer is critically noticed in four different sections. This might, however, be got rid of by more careful editing. The *Medical Annual* for 1887 will be reckoned by some an improvement on its predecessors, but not a few will regret the absence of such articles as that which was wont to be written by Dr J. E. Taylor, the popular editor of *Science Gossip*, on the annual progress of general science.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH

SESSION LXVI.—SPECIAL MEETING.

Wednesday, 16*th February* 1887.—Professor GRAINGER STEWART, *President, in the Chair.*

BUSINESS.

Discussion on EMPYEMA, introduced by Dr William Russell.

Dr Russell's paper appeared at page 780 of this Journal.

Dr Caverhill showed two cases, and made some remarks on the treatment.

Mr Duncan, called on by the President, said he had not understood he was expected to address the Society, and had not been careful to prepare any special observations, but he should be very glad to lay before them what experience he might have, and all the more readily because Dr Caverhill must have almost led them to believe that surgeons were ready to descend on every case of empyema, and take away a slice of the thorax. Such was hardly the way they looked on empyema. They were inclined to regard it as they did an abscess in any other part of the body. It was to be treated on exactly the same principles. The chief and first rule they applied to all abscesses, with very few exceptions, was, that whenever they diagnosed pus they should proceed to evacuate. That being so, the only question, having ascertained the case to be one of empyema, was how to evacuate. There were three ways in which this might be done. One was by aspiration, another by simple drainage, and a third by resection of ribs. In his opinion each of these had their value in connexion with empyema. What was the value, in the first place, of aspiration in connexion with abscess? They were coming to look upon aspiration with, on the whole, less and less favour in cases where there was distinct pus. For the withdrawal of thin fluids it was extremely effective, but with some forms of pus it could not be performed. One of the first points in the treatment of abscess by aspiration, which must be universally admitted, was that it was the rarest possible thing to bring about a cure except by repeated aspirations. In a certain number of cases by repeated aspirations they would succeed. In psoas abscess, for example, he had done so by four or five aspirations when combined with careful treatment of the cause, and here a question came in which should be worked out by the physicians—What was the cause of empyema? When they had removed the cause of the pus in empyema there might be a cure by aspiration. But there was another important point in connexion with aspiration which made it advisable that in every case it should be first resorted to, and that was, that by repeated aspirations they might bring about adhesions from the lung surface to the chest wall, and so encyst the empyema. This was of importance, both in reference to drainage and other methods. In a certain number of cases, therefore, aspiration did good. But supposing aspiration has failed, they came next to drainage, to the making of a simple incision, and that was a thing they would do without hesitation. He would not detain them with any discussion upon the spray, on which his sentiments were tolerably well known, merely saying that Dr Caverhill's single case did not to his mind demonstrate its usefulness as a germicide in the air. The drainage should be as complete as possible, and the pus made or kept aseptic. How was this to be done? First, there was the question Dr Russell had raised as to whether there should be one or two openings. For himself he had come to the conclusion that one opening was sufficient. The only advantage they got from two openings was in late cases where sinuses had formed. Where the incision should be made was another point. Mr Miller had pointed out that to make it too low was a mistake. In the adult falling in would generally take place unless the empyema was encysted. The diaphragm would then rise, and the low opening would become a long sinus, and another opening would have to be made higher up. Therefore it was better to make it at least two inches above the diaphragm, a little below and to the front of the angle of the scapula. There was another point of importance, and that was when the chest collapsed (as it would always at first, though it might rise afterwards) the india-rubber drainage tube had its calibre diminished by the pressure of the ribs, and, causing even absorption of the bone, produced a great deal of pain. In order to avoid this, he always now cut out a portion of one rib, and inserted the drainage tube through the hole thus made. These seemed to be the lines on which they went in drainage. In a very large proportion of cases it was successful. In all young persons he should say, and in all that were kept aseptic, they would succeed, and the lung would expand. In all cases in which the empyema was encysted, and in all cases got sufficiently early, they would also have a cure. But there was a certain number of cases in which they would not succeed. There were some that would not be cured by drainage, and died of amyloid degeneration—those long-continued cases in which there were adhesions by fibrous membranes of such density and thickness that it was absolutely impossible that the lung could ever expand. He was afraid they would never get to the Utopia where all cases of empyema came to the proper people at the proper time. In those cases that became septic, even if got early, the proportion in which drainage failed was greater than with others. In those long-continued cases in which the falling in of the chest wall had taken place to its utmost extent, and the lung was bound down, they must save from death, and the measure which was of value was certainly resection of the ribs. It was thought some years ago that about three ribs might be resected. He did this, but gave it up, as it was never of any value. Not less than six, and probably eight ribs (the third to the tenth inclusive) should be resected. It could be done by one incision, giving room to remove three to four inches in the middle; above and below rather less. He had done this in six cases, in two of which the operation had to be repeated. Three were cured, two were alive with sinuses (one of them going on well in Fifeshire). The sixth died of pyæmia. She went home with a drainage tube, and unfortunately had been careless about it, taking out the pin that fixed it, and allowing it to slip into the thorax. She delayed to return, not coming back for years, and died the day after her arrival. In all there was a considerable bending of the wall of the thorax. Dr Caverhill had referred to another point—the effort to expand the lung, which would be of value early in a case. There were various ways in which this might be done. He had tried it by putting a sucker on the chest wall, passing a tube through it into the thorax, and connecting it by syphon with antiseptic fluid in a vessel, which could be raised or lowered at pleasure. A very slight lowering had a very considerable effect, sometimes causing great pain from the amount of suction caused. This would act effectually for some hours, and then a little air would get in by the side of the sucker, stopping its action. How far it was useful he did not know. He had not had a sufficient number of cases, and the case in which he had tried it was of very old standing—the case that died of pyæmia. He had thought of trying something valvular—a valve falling up and down with the respiration. But, undoubtedly, the method of suction presented great practical difficulty.

Dr Affleck said the subject of empyema had engaged the attention of the profession since any one had practised scientific medicine. In the writings of the Father of Medicine considerable reference was made to it. Hippocrates was the first to practise auscultation, and he thought he could distinguish between the presence of pus and of serum in the pleural cavity. He was wrong, no doubt, but there were some observations he made on empyema and on fluid in the chest, both as regards diagnosis and treatment, which were of extreme interest, and showed that they had not made such great advance after all on his theory and practice in this matter. They had yet much to find out regarding the causation of empyema. They knew that it occurred sometimes simply from the intensity of the inflammation in persons previously apparently healthy. In others it appeared to be due to the occurrence of complications, as acute fevers. In the case he showed at last meeting, the empyema had not come on till the pleurisy had been complicated by scarlet fever and erysipelas. With regard to the presence of pus in the pleural cavity, as Dr Russell said, they had an infallible means of diagnosis in the exploratory puncture. This should be practised by every one, and he should be ready to aspirate at the moment. With regard to the symptomatic evidence they had not very precise information. Sometimes the fever, as Dr Russell said, indicated it, hectic symptoms, the appearance of the patient, the exhausted look; but sometimes they would find these present even where there was nothing but serum. He had tapped a large number of times, and sometimes had found serum where he expected pus, and pus where he expected serum. He did not know whether any one had noticed a peculiar character of the cough. He had sometimes noticed a peculiar ringing or metallic sound in it, even when there was no opening into the lung from the pleural cavity. It was worth observation. Probably they would find a difference between sounds of coughs in various thoracic diseases. As to treatment, he agreed with Dr Duncan as to the propriety of trying first aspiration. A good deal depended on the condition associated with pus in the pleura. If phthisis was present they might pursue one line of treatment; if it was not, then another. A good deal depended on the acuteness or chronicity of the case. If Hippocrates did not practise aspiration and drainage, he did something very like it. He treated empyemata in a very interesting way. He sometimes punctured in an intercostal space. He first watched for critical days, and on certain days he interfered; and he (Dr A.) thought it was on the fifteenth day after the fever that he punctured the intercostal space, or bored a small hole in a rib, and let out the matter. He allowed this drainage to go on for ten days, then he poured in a mixture of warm oil and wine, and closed it in by a small piece of linen rag, to which a thread was attached, drew out the rag and evacuated twice a day for ten days, then put in a metal sound, taking it out once or twice a day, and in that way got some very successful results. It was interesting to note this, considering how scanty his anatomical knowledge was. He thought aspiration should be practised in all acute cases in the first place. It should be performed as low as possible, and in that way the lung would probably descend if not bound too much by adhesions, and so obliterate or greatly diminish the pus-discharging cavity. One aspiration sometimes did for children, and even for adults.

Mr A. W. Hare referred to the probably tubercular origin of pleural inflammations in cases where there were no obvious meteorological agencies at work, nor the presence of contiguous inflammations. He recalled to mind the specimen of tubercular pleura shown by Dr Woodhead at the meeting on the 2nd of February, and he cited the recent researches of Keloch and Vaillard in support of his opinion. The latter observers concluded, from a series of exhaustive observations (see *Archives de Physiologie* for 15th August 1886), that pleuritic inflammations, whether serous, hæmorrhagic, or purulent, were associated with the local development of tubercles, and were therefore to be numbered among tubercular affections. Among other interesting observations detailed in the paper was that of the microscopical appearances in cases of recovered pleurisy. Here the pleura was found studded over with old tubercles enclosed in fibrous tissue and undergoing degeneration, as has been described in other situations. Mr Hare could not accept *in toto* the sweeping conclusions of these observers, but thought them of such importance as to demand careful attention and further investigation. In regard to the surgical treatment of empyema, Mr Duncan had already accurately defined the present state of opinion on the subject, and had sufficiently safeguarded the surgeon from a charge of rashness in cases where it was deemed expedient to remove a large section of the thoracic wall. At the same time, very considerable spinal curvature and thoracic deformity resulted from Estlander's operation when segments of so many as eight or nine ribs were removed. This was not only distressing to the patient, but might predispose to other diseased conditions. Just now this seemed a rather fashionable operation,—perhaps more so than could be absolutely justified, when its results were compared with those obtained from resection of a part of one rib and thorough drainage. The speaker had no desire to disparage the operation in cases where other means had been patiently tried without success; but even in these the question had to be settled, whether the resulting deformity were not worse than the condition prior to the operation. In regard to the operation generally, a clear definition was wanted of where justifiable and useful operative interference ended, and where needless mutilation began.

Dr James, in expressing his appreciation of Dr Russell's interesting and valuable paper, desired specially to state his approval of the concluding remark, viz., that it was to be hoped that fewer and fewer cases of empyema would pass out of the hands of the physician into those of the surgeon. At this the surgeon need not take umbrage, as he believed that in the great majority of cases this transference, so common at present, meant that medical treatment had not been properly directed and carried out. To understand the treatment of empyema one must understand the physical conditions of the respiratory organs. In the to and fro movement of the lungs against the costal pleura in respiration they had a good example of how Nature's acts might at one time tend to do harm and at another to do good. They tended to cause a spread of a pleuritic process, but effusion having occurred, the surfaces having been separated, and the inflammatory process having been allayed, they tended to cause expansion of the collapsed lung. If the chest wall were unopened, both inspiration and expiration tended to cause this expansion of the lung, but if there were an opening, expansion would be brought about mainly by expiration. Coughing would specially tend to this, but every expiration would aid, and they could often in such cases observe that patients, as it were, instinctively expired with closed glottis, and driving air from the sound lung into the collapsed one promoted its expansion. How successful such efforts could become many of them had seen. If, however, they could obtain expansion without a drainage opening into the pleura it would, no doubt, be better, and a mode of treatment which he had followed in empyema was repeated tapping. If in such cases they tapped at intervals of two or three or four weeks they did no good—the fluid simply reaccumulated, and the lung got more and more firmly bound down; but at intervals of two or three or four days the lung got a chance of expanding, and as the fluid which was drawn off often seemed to lose to some extent its purulent character and become more watery, the absorbents took a share of the good result. Of course cases might occur where this plan might fail, but he had often seen it entirely successful. When an opening had to be made for drainage, the plan of excising a small portion of rib, as carried out by Dr Duncan, seemed to be a particularly good one; it precluded closure by approximation of the ribs, and rendered the use of any rigid structure (which always caused pain) unnecessary. As regards the position for the opening, he believed that the fifth intercostal space, about the mid-axillary line, would be the best. This corresponded with the centre of the dull area which cases of absorbing pleurisy showed, bounded above by the well-known *curved line*. It was low enough down for the fluid, high enough up for the rising diaphragm, and far enough forward to permit of lung expansion from behind. On the subject of resection he would only say, that if it had to be done it should be done thoroughly. If the lung would not come to the chest wall, the chest wall must be allowed to go to the lung. The last point which he wished to mention concerned the character of the cough in purulent as distinguished from sero-fibrinous collections of fluid in the thoracic cavity, as referred to by Dr Affleck. He believed this might be due to the fact that in purulent collections the intra-thoracic pressure was usually much higher, and that the expiratory effort required for coughing would be correspondingly interfered with.

Mr A. G. Miller said that he agreed with Dr Duncan that they had not yet begun at the beginning of the treatment of empyema, seeing they had not yet found out the cause. He had seen the remark of an American surgeon, "No organisms, no pus." But Dr Caverhill had said to-night that careful investigation had failed to find organisms in his case. On the other hand, they had heard that tubercle bacilli were always present. Mr Miller had noticed that in those cases in which he had removed portions of ribs they were much thickened on the inner surface. Had bacilli been present in the pleura he would have expected caries, and not simple hypertrophy, from the irritation of the inflamed pleura. As to the question of when ribs should be removed in cases of empyema, he thought that when the lung was no longer capable of expansion by itself, and was tied down by a thick layer of fibrous as well as granulation tissue (as Dr Duncan had said), that then resection of portions of a sufficient number of ribs to bring about collapse of the chest wall was called for. In such circumstances it was necessary to bring the chest wall to the lung. In this way adhesion of the lung might be obtained, and when once this had occurred, it was possible for the lung, in the course of time, to expand by adhesion to the chest wall in the way so well explained by Dr James, and thus for the cavity to be obliterated. He referred to a case he had published, and showed the preparation where, after removal of portions of several ribs, the chest wall had fallen in, the lung had become adherent, and the cavity obliterated at that part all but a small sinus. Had the patient lived long enough, or more portions of rib been removed, the cavity might have been closed entirely, and a limited amount of function restored to the lung. Dr Duncan had referred to him (Mr Miller) as having been one of the first to point out that the rising of the diaphragm after draining an empyema acted as a valve, and occluded the opening if made very dependent at first. He considered it due to Dr Bramwell to say that the possibility of this had been pointed out by him. In the case already referred to Dr Bruce had discovered at the post-mortem that the diaphragm had risen as high as the fourth rib. In concluding his remarks, he would like to mention what he had noticed in some cases of empyema in emptying the chest. At first the pus flowed freely through the drainage tube which had been inserted, then the fluid came in gushes, alternating with rushes of air, into the cavity of the thorax, the pus coming out only to the extent to which the air passed in. This continued for some time, the discharge getting less and less. A time came when the pus was quite below the level of the opening, and no more could flow out if the patient lay still. Then at this moment (he had noticed) the patient suddenly became breathless and cyanotic. This lasted for only a few seconds, and then passed away. He was inclined to think that these symptoms were caused by the full pressure of the atmosphere being brought to bear on the pericardium and heart, and at the same time impeding the expansion of the healthy lung.

Dr Haddon was understood to advocate early tapping in cases of pleurisy with effusion.

Dr Leith Napier, considering the shortness of the time at each individual's disposal, would regard the subject wholly from a practical or clinical aspect. He would remind the Society that he could not be accused of undue temerity in recommending and carrying out operations within the thorax. In 1878 he published some cases in the *Lancet*, and advocated the emptying of phthisical cavities, and at the same time related a very good instance of the benefits attending free incision in empyema after unsuccessful aspirations. This he ventured to recall, because he now wished to say that he believed that many large serous effusions were rendered purulent by injudicious indiscriminate operative procedures. The absorbent power of serous surfaces was very great. He had frequently seen very large quantities of fluid occupying both sides of the chest become perfectly absorbed without aspiration,—operation being delayed to permit improvement in the general condition. To obtain general constitutional improvement was often the best and safest way of promoting satisfactory cure in pleural effusions, more particularly in children. Another objection to improper or insufficient operation was that should a sinus remain after aspiration they frequently found carious ribs and amyloid degeneration of viscera as sequelæ. The presumptive diagnostic signs of an empyema were—the length of time a copious effusion had existed, a large quantity of fluid with a rapid filling of the chest, rigors and low fever in course of a pleurisy. Afterwards they might have hyperpyrexia. Yet he had refrained from operation in several such cases, and found the ultimate condition to be better, although convalescence might be more tardy than in like cases subjected to surgical interference. It must be remembered that a lung which had become compressed by fluid for a long time, and was airless, would not regain its original condition to any great extent; and that they had change of bony parts, retraction of ribs, falling of shoulders, etc., after the fluid had been removed either by absorption or aspiration, more probably after the too rapid removal by aspiration, when the whole of the fluid was attempted to be withdrawn. The treatment of empyema in children and in adults must be regarded from different aspects. Some authorities taught that aspiration should be performed two or three times before the radical operation of incision. Fräntzel considered the latter always necessary except in tubercular cases, which he treated solely by tapping. On the one hand, Aufrecht had never seen good from simple tapping, even in children. On the other hand, Branthome averred that puncture alone would cure children.

Dr Napier's experience agreed with Mr Godlee's, who, in the *Lancet* for 1886 (vol. i. pp. 51, 95 *et seq.*), stated that some cases of empyema in children recovered well without surgical interference. In chronic phthisis a true empyema might be best left alone. In lung abscess, unless it were absolutely clear that the case was tubercular, or when the abscess was in direct contact with a bronchus, he would counsel incision after exploratory aspiration in the case of adults, and, with less confidence, the same in children. Drainage should be maintained for a fortnight, not longer, in children, and in adults one must be guided by the quantity and condition of discharge. He believed in one opening, and thought that when ribs were removed they should also remove the periosteum—otherwise, especially in young children, if such an operation were really a necessity, the growth of new bone would be probably too rapid. Speaking of empyema in pregnant and puerperal women, he would express the decided conviction that aspiration was quite insufficient, and therefore unwarranted. If any operation was adopted, which must always be considered a very grave question, free incision would give far better results, accompanied by no more, if as much, risk. He must refrain from entering on the question of empyema *sine* micro-organisms; but if Prof. Ogston's researches on the relation of micro-organisms to healthy abscesses were borne in mind, it would be difficult to realize an empyema, a collection of veritable pus, without some organism as cause or result.

Dr William Hunter directed attention to the part played by the diaphragm in promoting the absorption of pleural effusions, the very excess of fluid present in large effusions, by limiting the range of movement of the diaphragm, tending to interfere with their absorption. It was probably this fact which in part explained the marked effect sometimes produced in such cases by the removal of even a relatively small quantity of the fluid, the greater freedom of movement then permitted enabling the further absorption of the fluid to be completed spontaneously.

Dr Watson Campbell, Duns, said the subject of discussion to-night was of special interest, inasmuch as it brought the physician and surgeon on common ground; and he thought there could be but one opinion as to the way in which it had been opened by Dr Russell. As to the diagnosis of empyema, Dr Russell, after mentioning other means of diagnosis, said that the exploring needle was the most certain and satisfactory, and in this he was followed by Dr Affleck. He did not suppose that there could be the slightest doubt about that, but he failed to see that it was, in most cases, of importance to have recourse to it; for, after having ascertained the nature of the fluid, something further must be done at once, and the aspirator would enable the operator not only to determine whether it was serum or pus he had to deal with, but to remove it; it initiated and completed the operation. Then, with reference to the time for surgical interference, Dr Duncan remarked that he treated empyema as he did a common abscess: when pus was present he let it out.

Dr Duncan.—I did not say I would wait for the formation of pus.

Dr Watson Campbell said—Well, he thought aspiration should be done at an early stage. The late Prof. Miller used to teach that there were three areas in an ordinary abscess—a central, and a second and third outside of it; that serum was effused into the first, which degenerated into pus, and that this involved the surrounding tissues when seeking a way out; and that by cutting early and deeply, so as to reach the central area, the degeneration into pus was anticipated, and a way made for escape of morbid material with the least destruction of tissue. Now, he thought something like this mode of procedure should be carried out in dealing with the serous effusion of pleurisy. He believed Dr Haddon was right in advocating that aspiration should be performed early, and that by doing this many cases of serous effusion might be prevented from degenerating into empyema. If the effused fluid were copious, and attended with dyspnœa and visceral displacement, he thought it safer to aspirate than wait in the hope of absorption taking place, seeing that, by delay, there was risk of the fluid changing its character. He had not had much experience of empyema—in fact, he had only had one case—but he had aspirated frequently; and he believed he would have had a greater experience of it if he had delayed aspirating some of his cases, even for a short time. As the case referred to was interesting, he would briefly give the leading particulars. The patient was a young woman. After serous effusion had been going on for about eight days, he thought it would be proper to aspirate on his next visit, if there did not appear to be any arrestment of the effusion. Unfortunately, he was unable to see her for two days, and then he was struck by the change in her appearance. She had an anxious expression, a hectic blush, and was sweating, which led him to suspect degeneration of the fluid. He might here state that, before perforating, he usually made a very slight incision in the skin to facilitate the passage of the trocar and cannula; but he did not remember whether or not he did so in this case. He remembered, however, that the instrument went through the chest wall with a plunge—much further than he meant it to go; so far, indeed, that he believed it went right into the lung. A very violent fit of coughing ensued and continued some time, though he withdrew the trocar and cannula at once into the pleural cavity. After subsidence of the cough he drew off 20 ounces of thick yellow pus; but, during the process, he had to stop several times on account of recurrent cough. After aspirating this quantity he was compelled to desist, as the cough became violent and persistent. Immediately after withdrawing the cannula she began to expectorate pus in large quantity. The cough and expectoration continued night and day for four or five days, gradually, however, decreasing in severity and quantity. The result was satisfactory. He aspirated about the middle of May. By the term-day, the 26th, she was so far well as to bear removal a distance of nine miles, and in autumn was strong and well, and able to engage in out-of-door work as a farm servant. He might mention that she soon after married, that she had four or five children, and enjoyed excellent health.

Dr Byrom Bramwell said that at that late hour of the evening he would not attempt to consider the whole subject of empyema in any detail; but there were one or two points which had arisen during the course of the debate to which he would like to refer. The fact which Dr Russell had brought forward that in children the breath sounds are often pretty distinctly heard over portions of the pleura which contain fluid was, he thought, a fact of great importance, and one which he could confirm by personal observation. The point was brought under his notice many years ago (either in 1868 or 1869) by the late Sir Robert Christison, and he had frequently satisfied himself that in some cases it is a fact.[1] He had been very much interested in Mr Hare's statement with regard to the French observations of the relationship of the tubercle bacillus to the etiology of pleurisy and empyema, and he thought the point was one which would repay investigation by those who had the opportunity of pathological work. Doubtless, some cases of pleurisy and empyema were due to tubercle, but he very much doubted whether tubercle was the usual cause of these conditions; for his own part, he would certainly hesitate to accept the conclusions to which Mr Hare had referred until they had been fully confirmed by subsequent and independent investigators. He had for long thought that one reason why empyema was more common in children than in adults, was due to the fact that in some cases of empyema in the child the empyema was due to broncho-pneumonic patches on the surface of the lung, the inflammatory condition beginning in the lung and subsequently extending to the pleura. He could not agree with Dr Leith Napier's view that the diagnostic puncture was better avoided. Certainly he himself had seen a simple pleurisy become an empyema after aspiration; indeed, in two cases he had, he thought, produced empyema in this way; but these cases occurred many years ago, when strict antiseptic precautions were not so generally used as they are now. Of recent years he had not seen any such results, and he entirely agreed with the position which Dr Russell had taken up as to the necessity and usefulness of the diagnostic puncture. He thought that it was in many cases the only certain means of determining whether the fluid in the pleura was purulent or not, and rendered other means of diagnosis unnecessary; and he believed it to be a perfectly safe means of procedure. It must, however, be remembered that the hypodermic needle did not clear up all cases. In some the fine needle got choked up with lymph, or the pus was so thick that it would not flow through it. In such cases the instrument should be withdrawn, washed out, and again inserted, or a larger tube used. Time did not permit him to refer to those cases in which a solid intra-thoracic tumour was complicated with pleuritic effusion or empyema. The diagnosis in such conditions was often most difficult, and was in many instances materially simplified by means of the hypodermic syringe. The mode of operation in empyema (*i.e.*, when the fluid within the chest was shown by the diagnostic puncture to be purulent) depended, he thought, upon circumstances. His own experience certainly agreed with that of those who say that in the adult aspiration is useless. He had seen cases of empyema in children cured by aspiration, but no such cases cured in an adult. Possibly this was, as Dr James had suggested, due to the fact that the aspiration was not sufficiently frequently repeated and sufficiently thoroughly performed. He, however, doubted that explanation, for in most cases of empyema in the adult (in whom the chest wall is rigid and does not so readily collapse as it does in the child) it is difficult or impossible to draw off all the pus, or anything like all the pus, by simple aspiration; and in order to effect a cure, the complete removal of the pus is most desirable. Any one who had had much experience of aspirating the chest, even, in simple pleuritic effusion, where the lung was usually much more capable of expanding than in cases of empyema, must acknowledge that it is often impossible to withdraw anything like the whole of the fluid; he himself had repeatedly seen such violent constrictive pain, cough, marked cyanosis, and alarming symptoms occur, that the aspiration had to be suspended long before all the fluid was withdrawn. He very much doubted, therefore, whether in the adult empyemata would be likely to be cured by repeated aspiration. Until recently he had always taught that, while aspiration should be tried in the child, free evacuation should be practised under strict antiseptic precautions in the adult, a drainage tube inserted, and the case treated as a large internal abscess. There could, however, be no doubt that a free opening into the chest wall, by allowing the entrance of air into the pleural cavity, and by equalizing the atmospheric pressure on the inner and outer surfaces of the lung, did materially interfere with the expansion of a collapsed lung, and should therefore, if possible, be avoided. He was disposed to think that continuous drainage by syphon action through a tube placed under water was, theoretically at all events, the best means of treatment. By this means a continuous suction can be exerted upon the pleural cavity; the serious symptoms due to rapid aspiration are avoided, atmospheric air is not allowed to enter the pleural cavity, and the atmospheric pressure on the bronchi and interior of the lung is therefore free to act unopposed as a dilating agent; there is not the same risk of septic mischief being set up in the cavity of the pleura. Further, by varying the size of the tube or the length of the syphon, the suction force can be easily regulated. Dr Bramwell was disposed to think that in the adult continuous drainage by syphon suction should first be tried; and if this did not succeed, a free opening should then be made into the cavity of the thorax, and a drainage tube inserted, the strictest antiseptic precautions being of course adopted. He quite agreed with Dr Duncan that there were cases in which, in consequence of the lung being adherent, and incapable of expansion, all these methods failed, and in which it was advisable to resect the chest wall. In his opinion the risks of this operation were less than the risks which the patient necessarily ran in cases of this description of waxy degeneration and other complications.

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[1] The case to which Sir Robert Christison particularly referred was that of a patient living at the south side of Edinburgh, if my memory serves me, whom he had seen in consultation with one of the Keiths.

Dr Brakenridge agreed with Dr Byrom Bramwell in thinking that many cases of empyema arose from the rupture of small catarrhal-pneumonic-phthisical cavities on the surface of the lung into the pleural cavity. This applied to the disease in the adult as well as in the child. Because this was a possible cause in many cases of empyema, the very greatest caution was necessary in the employment of any negative pressure on the lung within the pleural cavity, or positive pressure within the lung itself, which was calculated to expand the lung on the diseased side. By the injudicious use of the aspirator in connexion with an exhausted jar, such powerful traction was often exerted upon a diseased portion of lung that a small opening on the surface was thereby converted into a free communication between a bronchial tube and the pleural cavity, or a communication was formed which did not previously exist, and a pneumo-thorax thus established. This result unquestionably followed aspiration in the case of a servant girl, aged 17, who was brought into Dr Brakenridge's ward on 4th December 1885, suffering from what appeared to be an attack of simple pleurisy. The girl's family history was markedly phthisical, but she had enjoyed good health until three days prior to admission. She was hanging out clothes to dry, and caught cold. This was followed by pain in the left side, and when she was examined three days later, she presented all the signs of pleurisy with effusion. That day, as the fluid was accumulating rapidly and giving rise to urgent dyspnœa, 32 ounces of cloudy fluid were removed by the aspirator. This was found to contain a small amount of pus. The operation gave considerable relief. Two days later the fluid, having again accumulated, was again removed by aspiration to the amount of 38 ounces. The fluid on this occasion contained a good deal of pus. Soon after this second tapping it became clear that the upper half of the pleural cavity contained air, and that a free communication had become established between a tolerably large bronchial tube and the pleural cavity near the lower angle of the left scapula posteriorly. Soon the patient began to expectorate large masses of pus, and great displacement of the heart took place, the apex beat being in the right anterior axillary line. The temperature and pulse rose, and she became very breathless and hectic. A few nights later she was nearly suffocated with the quantity of pus which poured through her lungs into the trachea; and, as her life was in danger, Mr John Duncan, at Dr Brakenridge's request, laid open the pleura by free incision in the eighth interspace in the left axilla, inserted drainage tubes, and dressed the wound antiseptically. A free evacuation of the pus was thus effected, and from that moment the patient's expectoration gradually and rapidly diminished, until in a few days it had entirely ceased. In a similar manner her temperature, pulse, and respirations steadily fell. Adhesion of the pleural surfaces took place gradually but quickly from above downwards, and the lung expanded so perfectly that a few weeks later no difference in size could be detected by the physical signs between the lungs on both sides, and that on the left side appeared equally healthy with that on the right. The apex of the heart, which before the operation was beating in the right anterior axillary line, after recovery beat in the normal position. The patient still—two years after the operation—enjoyed perfect health. This case illustrated well the danger of aspiration, and the excellent results which might follow a timely free incision. A very interesting question arose at this point. By what mechanism was the expansion of the lung effected in such a case? It was quite true that (as Dr James had suggested) some degree of expansion must be effected by the lung being pressed downwards and forwards by the expiratory efforts and the fixing of the lung by pleuritic adhesions at the advanced positions it had so reached. This would not, however, explain the perfect expansion of a lung in communication with the external atmosphere through the pleural cavity. In a clinical lecture which Dr Brakenridge gave on the above and several other cases two years ago, he stated his belief that the force of the right ventricle acting on the inner surfaces of the pulmonary vessels must be allowed to have a considerable influence in gradually expanding the collapsed lung. This followed from Pascal's law that "pressure exerted anywhere upon a mass of liquid is transmitted undiminished in all directions, and acts with the same force on all equal surfaces, and in a direction at right angles to their surfaces." As the lung, gradually expanding from above downwards, became fixed at certain levels, the pressure within its vessels would drive the next portion a little further down, and so on from point to point until a considerable degree of expansion had been effected. The suggestion of Dr James that expiratory efforts on the part of the patient must tend to expand the collapsed lung was most important. Certainly, just as emphysema was produced by the forcible expiratory efforts of coughing, so expansion of a collapsed lung might be similarly assisted by voluntary expiratory efforts. Not one, but probably several of these factors together, effected the expansion of the lung in the most satisfactory cases, such as that to which he had referred.

Dr A. J. Sinclair considered what he might term the pneumatic treatment of empyema a most important one, and one to which sufficient attention was not paid. There was no doubt that they were deprived, by having a fistulous opening in the intercostal wall, of the powerful force of inspiration in reproducing expansion of the lung, but they still had a powerful agent in the expiratory forces. He was glad to find, from Dr James's remarks, that he had not underrated this agent, and in the remarks which had fallen from Dr James he entirely concurred. He desired to relate a case bearing on the point. It was one which happened in his practice some years ago. A young man had been under his treatment for empyema. The case, after being opened, ran an ordinary course, and progressed satisfactorily up to a certain length, when there progress ceased, and an obstinate fistulous opening remained. The man, being formerly an amateur player on the cornet, wearied for a trial of his favourite instrument and asked permission, which was granted. From that date the fistulous opening steadily closed. They had here an instance where the expiratory force acted as a powerful agent in approximating the pulmonary to the costal pleura and contracting the cavity. They might have observed, in Dr Affleck's case, that after the ribs had been resected that the lung partially expanded, and that Dr Affleck directed their attention to the existence of the respiratory murmur at a place before inaudible—showing that all hope of the re-expansion of the lung was not lost. Dr Sinclair also exhibited a drainage tube which he had been using for some years. It was an ordinary rubber tube, with rubber shield, stiffened at its commencement by the introduction of an inch of lead pipe. The advantage of this was the prevention of intercostal space pressing on a flexible tube; and also by keeping the shield a short distance from the skin, antiseptic material might be packed round the commencement of tube, and the discharge drained more into the centre of the dressings. This method prevented the pus escaping between the skin and dressing, and permitted the patient to be kept more comfortable, and less liable to the danger of septic mischief. The tube answered for any large chronic abscess.

Dr John Thomson said he had met with two cases in which pus, at first apparently free in the pleural cavity, after two or three aspirations reaccumulated in the form of a small circumscribed empyema over the base of the lung posteriorly. Out of more than forty cases of empyema in children, which he had the opportunity of observing while Resident to a Children's Hospital, fourteen had been cured by simple aspiration. In the majority of these the pus was small in amount and circumscribed. In some of the cases one aspiration was enough, in most two or three were required, and in one as many as five. He had only seen one case of empyema in a child in which the pus, when first removed, was offensive. It was on the right side.

The President, in calling on Dr Russell to reply, congratulated him on the successful discussion he had inaugurated, and the exceedingly valuable record of cases, and the deductions therefrom, which he had given in his paper at the commencement.

Dr Russell said the discussion had been one of the best he had heard at the Medico-Chirurgical Society. For that he did not take the credit to himself. It was due rather to the interest and importance of the subject. He did not propose to go over the remarks of the various speakers in detail, but would refer to one or two points that had impressed him. As to the differential diagnosis of purulent effusion, the only new point mentioned was the ringing character of the cough which was noted by Dr Affleck and Dr James. With reference to the ætiology two suggestions had been made. One by Dr Hare, quoted from recent French observations, was that pleurisy in every case was a result of tuberculosis. With Dr Bramwell he agreed that in this country they were not as yet prepared to accept a sweeping statement of this kind. It involved the wide question of what tuberculosis really was, both from the clinical and the pathological point of view. Much work had yet to be done at this subject before they could come to a completely satisfactory conclusion regarding it. The other suggestion came from Dr Bramwell, who believed that, in children especially, an empyema was the result of or followed upon a patch of broncho-pneumonia. Dr Brakenridge mentioned a case in which this seemed to have occurred, and in which perforation took place. As to treatment, the suggestion made by Dr James, and the idea suggested to Dr Sinclair by his patient, the cornet player, were of the utmost importance. As to operative procedure, there had been a tendency to advance from the present treatment, and if they could cure by tapping every day or every second day they made a distinct gain. Dr Bramwell's idea of endeavouring to empty the pleura by continuous syphon action was an extremely good one. With this idea they were familiar, but it was not much practised in this country. He had stated his belief in the absolute harmlessness of the hypodermic needle or aspirator as an aid to diagnosis, and all the speakers, with one exception, had agreed with him. He entirely disagreed with the statement that with fewer aspirations there would be fewer empyemata. In his own cases only one was serous at the beginning. From Dr Lockie of Carlisle he learned that he had had twelve cases, in only three of which was the fluid serous when first aspirated. There were, therefore, a large number of cases purulent from the beginning;

and for himself he would sooner adhere to the old lines, and have the satisfaction of seeing a child rapidly regaining health and strength after incision, than leave it to drag on in a wretched condition, becoming emaciated and hectic, in the hope that the pus would dry up. It was the following out of that line of treatment that led to the special kind of experience hospital surgeons and physicians had in empyema.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVIII.—MEETING V.

Wednesday, 9th March 1887.—Dr HALLIDAY CROOM, *President, in the Chair.*

I. *Dr Halliday Croom* showed—(*a.*) OVARIES removed for hæmorrhage; (*b.*) A SMALL OVARIAN TUMOUR.

II. *Dr Halliday Croom* read a paper on THE INDICATIONS FOR, AND THE METHOD OF WASHING OUT THE PUERPERAL UTERUS, which appears at page 979 of this Journal.

Professor Simpson thought they were greatly indebted to the President for his paper, as the subject was one of vital interest and importance. He had no criticism to make, as the matter had been so exhaustively treated by Dr Croom. He would like to have seen the tubes mentioned in the paper; it was important that they should be of sufficient length, and constructed in such a way as to allow reflex from the uterus. Budin's horse-shoe catheter was useful on that account. He agreed with Dr Croom as to the danger of using corrosive sublimate, and recommended that after corrosive had been used, it should be followed up with a stream of hot water. The paper was one of high practical value.

Dr Leith Napier considered that in late septic cases more good could be got from the use of iodoform pessaries. He did not know if the profession was prejudiced against permanganate of potash, but he had found it of great service.

Dr Berry Hart differed from one point in the paper, namely, that it is of no use to practise intrauterine douching where parametritis exists. When fixation of the uterus is present, it may not be due to sepsis, but may only be inflammatory. Dr Hart mentioned a case where the uterus was fixed, and the patient was dying of septicæmia, but was saved by the use of corrosive sublimate. When the mischief is beyond the uterus, abdominal section should be performed, and intra-abdominal douching practised. Corrosive sublimate is as safe as chloroform, if properly used. No man has a right to use it as strong as 1–1000 in the uterus. It was quite possible that in those fatal cases where a low strength had been used that the kidneys had been previously affected. Dr Stevens, in his observations on the urine of patients in the Maternity, had found that in nearly every case the urine contained some albumen. The question arose—Will douching with corrosive sublimate not set up kidney mischief in these cases?

The President briefly replied.

III. *Dr Brewis* read a paper on A CASE OF SPONTANEOUS INVERSION OF THE UTERUS, which will appear in a future number of this Journal.

Dr Berry Hart said it was difficult to understand how replacement took place. It was an interesting point to consider whether the douching did not distend and open up the vagina in such a way that pressure was exerted on the whole of the inverted portion, and if we assume that the ring is a fixed point which resists replacement, it was possible that this ballooning of the vagina might produce a sufficient amount of pressure to overcome the resistance at the ring, and allow reduction to take place. Reduction having taken place in this instance under the influence of hot water made the case an interesting one, and he thought that such treatment would be carried out with advantage with the patient in the genu-pectoral position.

Professor Simpson said it was rare to have inversion from fibroid tumours. He had only seen one case inverted by a fibroid. He had seen one case wholly inverted by sarcoma, and one partly so. Sarcoma was deeply imbedded in the uterus, and caused paralysis of the part from which it grew. On account of the large area of uterine wall affected in sarcoma, it was easy to understand that inversion would take place more readily than in a case of fibrous polypus, where a smaller portion of the uterus is affected. Dr Brewis's case was valuable as illustrating the use of hot water. He thought with Dr Hart that ballooning of the vagina may have had something to do with the replacement. The use of Aveling's repositor was not without danger; it may be left in too long, and become swallowed in the uterine cavity after reduction has been effected.

Dr Milne Murray thought a ray of light might be thrown on the subject if we consider that the two sets of muscular fibres may act alternately; that we may have contraction of one set of fibres, with relaxation of the other. There may be relaxation of the circular fibres, and at the same time contraction of the longitudinal ones, so that ascent may take place. He doubts if ballooning of the vagina has anything to do with it, as during douching very little distension of the vagina occurs, unless the escape of fluid is prevented, and the douche can so placed as to give a high column of fluid. He thought that there was absence of tonus in the prolapsed portion when prolapse was produced by a polypus, and that after removal of the polypus tonus became established, and return took place.

Dr Church had seen two cases of inversion in twelve months, when he was in charge of Dr Matthews Duncan's ward. One was a case of spontaneous inversion, which was treated with continuous pressure, kept up for several weeks. It terminated successfully, and the patient became pregnant afterwards. The second case was amputated, and the patient died.

The President thought the case was an unique one, and was interesting on account of the method of treatment followed. It was difficult to understand how reduction took place. Two points had been overlooked: the first was, that before a woman could have such a tumour the uterus must have been irritable; and the second, that too little stress had been put on the fact of manual reposition having been tried. From the fact of its having expelled the polypus, the uterus must have had a good deal of contractile power.

Dr Brewis thanked the Society for having listened to his paper.

IV. *Dr Leith Napier* read a paper on THE TREATMENT OF PROLAPSUS UTERI, WITH AN ACCOUNT OF A MODIFIED METHOD OF ANTERIOR COLPORRAPHY, which will appear in a future number of this Journal.

Mr Skene Keith had been greatly interested in Dr Napier's paper, as he is at a loss to know what is the best operative treatment for prolapse. Operations such as Dr Napier's do well for a time, but in a year or two the prolapse often returns. Mr Keith thought the fault lay in not going to the root of the matter. A paper had been published lately by Kelly of Philadelphia, advocating stitching of the uterus up to the abdominal wall. In the case of a lady from Canada, on whom seven operations had been previously performed by others, Dr Keith, by removing the ovaries which were diseased, and fixing one broad ligament to the abdominal wall, had a successful result. In a case that was fixed up in June last, it was found the other day to be in good position. Dr Napier does not advise doing anything to the cervix. Mr Keith thinks that if it is lacerated it should be repaired, as the uterus then decreases in size.

The President would like to say that Dr Napier has given an excellent *résumé* of the treatment of prolapsus uteri. No one knows how much good rest and hot water will do. He agrees with Dr Napier that it is now time that diagrams were made intelligible. He does not agree that the cervix should not be amputated. He regards Dr Napier's operation an excellent one, suggested by common sense. His own inclinations, however, go with the Alexander-Adams' operation. At the same time, should he get an opportunity, he will give Dr Napier's operation a trial.

Dr Napier, in reply, presumed by removing ovaries cure was effected by inducing senile atrophy. With regard to amputation of the cervix, he had the feeling that if erosion could be cured by topical application, amputation should not be resorted to. Alexander-Adams' operation would probably do away in great measure with plastic ones. If cystocele or rectocele existed, it was impossible to cure these conditions by slinging up the uterus. He was not sure if the plan of putting the sound into the bladder was original or not, but it was a great advantage to the operator.

THE GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

THE sixth meeting of the session was held in the Faculty Hall, St Vincent Street, on 23rd March 1887—Dr Sloan, President, in the chair.

CONES of COCAIN and BORIC ACID, as recommended by Dr E. Head Moore for use in primiparæ and cases of rigid os, were shown by Dr Smith of Motherwell.

Dr J. Stuart Nairne showed TWO SIMPLE FORMS OF WIRE CLAMP, and Dr W. L. Reid passed a favourable criticism upon them.

Dr Murdoch Cameron exhibited a CERVIX AMPUTATED FOR ELONGATION by Prof. Leishman. The patient was a nullipara. He advocated the use of the galvanic ecraseur in such cases.

The President then showed the SPLEEN and UTERUS, with APPENDAGES, of a woman who died in the Maternity Hospital on the twenty-second day of the puerperium; and called upon his house-surgeon, Dr Du Moulin, to read the notes of the case from the journal, and to show the temperature chart.

From these it appeared that M. W., æt. 22, a primipara, entered the Maternity on 8th February. She was unmarried, and thin and delicate looking. For two months previously she had had no home, and had slept in closes or walked the street all night frequently. Sometimes she had passed forty-eight hours without any food. She had been walking about the night previous to her admission, and had had no food for twenty-four hours. On the 13th, at 11.44 A.M., she was delivered of a mature female infant, weighing 6½ lbs., the presentation having been the third cranial; and the duration of labour thirty-six hours for the first, four for the second, and fifteen minutes for the third stage. Aid was given during the second stage by means of Simpson's axis-traction forceps; and these being removed, the third stage was precipitate, a perineal rupture being the result. This was stitched immediately, and the vagina was douched. The stitches were removed on the third day for tension. On admission her urine was found to be albuminous to the extent of a third, and it continued in a similar condition after labour. Her temperature on the 13th was 101°; and it continued pyrexial throughout, rising to 104°·4 on the 21st, 105°·2 on the 23rd, and to 105°·8 a day or so prior to death. Soon after labour she became very thirsty, and had frequent perspirations. On the 15th diarrhœa (seven motions) was noted; she passed several clots, and had a rigor. On the 18th considerable uterine pain and hysterical phenomena are recorded. From the 19th to the 24th she *felt* fairly well, though on the 21st she had a rigor. On the 25th she had a numbness in her right leg, from the knee to the toes. On the 26th pain was experienced in right popliteal space. On 2nd March she had convulsive movements of the right arm, and on the 4th painful swelling of the left wrist. On the 5th quivering of the legs and arms was a prominent symptom, and on the 6th sordes formed on the teeth and lips, and rapid respiration (72 per minute) preceded dissolution at 7 P.M. At the post-mortem examination the kidneys were found microscopically normal, and involution of the womb was well advanced. The spleen was in process of healing after an intra-capsular rupture. The day before death the perineal wound looked very unhealthy.

The President then remarked that there was apparently a small tear of the cervix, which had completely healed. The thickening at the placental site might be supposed by some to be a portion of placenta; but he could assure them that this prominence was scarcely, if at all, visible at the post-mortem, and it had probably arisen from the action of the spirit. The whole of the interior was indeed noticed to be specially fresh and healthy looking. Besides, the advance of involution was evidence of the absence throughout of any putridity there. He said that the spleen, which was slightly increased in size, had shrunk from the action of the spirit, and there was now no indication of the cavity mentioned in the report. He had been unable to find a similar condition of spleen reported, though the late Sir James Simpson knew of three cases of fatal rupture of this organ. Two of these cases had proved fatal shortly after labour, the remaining one a week or two after delivery. In these cases, however, the coats of the spleen had ruptured, whereas in this case the coats had remained entire. He believed that this internal laceration had been caused by the severe strain of the obstructed labour, and that it might account for the prostration of the woman at the close of labour. The section of the spleen at the seat of injury, which was under the microscope, they would notice was indicative of a process of repair —of a change into fibrous tissue—and had no appearance of having been at any time in a purulent condition. He would like to try to answer the question, What did this woman die from? It was evident that she nearly died from the effects of the labour, and was in danger of succumbing to the ordinary perils of the puerperium. The diarrhœa had also a share in causing death, and it was a question whether this condition was the result of the starvation and exposure. It must be admitted, however, that some putrid poison had entered the blood, absorbed from the extensive perineal laceration, which had early become inflamed, and had for a considerable time a diphtheritic appearance, though there was certainly nothing of the nature of a diphtheritic membrane on the unbroken surface of the vagina or vulva. Did the woman, then, he would ask, die *from septicæmia*, or did she die *with sapræmia*, but also, if not mainly, from other causes? He explained the latter term, which he believed had been first used by Dr Matthews Duncan, to mean blood with *putrefied* matter in it; the former being blood with *putrefying* matter in it. In a case of sapræmia, if only the further supply of the poison were prevented, as by syringing a uterus in which putrid lochiæ lay, in a brief space of time the poison was eliminated from the blood, and the fever subsided, either because the poison was not of the nature of a ferment, or because the blood had proved an unsuitable soil for its development. Now, in the case of this girl, the blood was surely in the most favourable conditions for the development of any poison capable of developing; yet, notwithstanding the fact that the patient lived three weeks after delivery, there were no signs of septicæmic inflammation nor of purulent deposition. The clots in the heart and axillary vein were aseptic, and had evidently formed during the slowing of the blood current immediately before death. He reminded the Society that, though there had been some phlebitis of the leg and some pain and swelling of the wrist, the former had disappeared with the simplest of treatment, whilst at the post-mortem there was nothing to indicate that the latter had ever existed. Was the seat of origin of the poison, he asked, the cause of its comparative innocence? If the cervix instead of the perineum had been seriously bruised or torn, or a clot or piece of placenta been left in the uterus, would we not have had an acute septicæmia with rapid death, or a less acute form ending in multiple abscess? Another point he suggested for discussion was this, Did the getting out of bed, which he always permitted in cases of mental distress where practicable, break up the base of the perineal ulcer and permit an easier entrance of the poison into the blood? Regarding the hypodermic injections of eucalyptus oil, he stated that this was only the second case in which he had given this treatment a fair trial; the first case having recovered, though many large abscesses had been in existence before this treatment was begun, and the woman had been to all appearance moribund.

Mr Nairne remarked upon the fact of albuminous urine in connexion with the apparently healthy kidneys as shown post-mortem.

Dr Marshall inquired if there had been no signs or symptoms of the splenic rupture during the illness; and remarked that embolism might probably have occurred in different situations owing to the introduction of small blood-clots into the circulation from the seat of the rupture.

Dr Murdoch Cameron inclined to the view that the case was one of septicæmia.

Dr W. L. Reid thought more stress was to be laid on the condition of the recipient blood than on the nature of the poison itself.

Dr Pollok thought it possible an abscess may have formed in the spleen and been absorbed, causing pyæmia.

Dr Oliphant raised the question of fatty embolism in the lungs, induced by the eucalyptus oil injections hypodermically.

The President, in reply to Dr Reid, said he felt that the absence of pathological evidence of septicæmia, together with the fact that there had been plenty of time for its development, was against the view of ordinary septicæmia. He thought Dr Oliphant had failed to notice that lividity was a marked symptom before the administration of the eucalyptus oil, and that the dyspnœa was evidently due to bronchial obstruction. He could not see that the oil could do any harm to the lungs; it had not done so in the other case in which he had used it. As to other cases in which this treatment had been tried for a few hours before death, he pointed out that he did not say he had only tried it twice, but that he had only given it a *fair* trial in these two cases. He explained, in reply to Dr Park, that it was the finest quality of the ordinary oil, and not Sander's extractum eucalypti, which had been used, that it was mixed with the finest olive oil in the proportion of 1 to 4, and of this 20 minims were injected at each dose.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Calendula.—In the *Medical and Surgical Reporter* for January there is an abstract of a paper on this drug by Dr R. G. Reynolds, from the *Pacific Medical and Surgical Journal*, in which the author states that he has used with the most perfect success a tincture made from the flowers of calendula (the common marigold of our gardens) as an antiseptic dressing to wounds. He bandages up the wound with lint soaked with this tincture, and keeps it moist by adding a little of the tincture from time to time. He finds that the wound heals by the first intention, and relates several interesting cases illustrative of the good effects of tincture of marigold as a valuable antiseptic.

A Speedy Cure of Whooping-Cough.—Mohu, a Norwegian physician, had in his own family a case of scarlatina and whooping-cough. After the violence of the scarlatinal attack had subsided, but while the whooping-cough was still present, Mohu disinfected the child's bedding with the fumes of sulphur. Just previous to the fumigation the child had a severe paroxysm of coughing, which led the father to hesitate in his employment of the sulphur. He was surprised and gratified, however, to observe that the disease was cured; and the patient's sister, who had a cough, the sequela of pertussis, was also cured. These children were not included in the fumigation intentionally, but inhaled such vapour as casually permeated their apartment. In a subsequent severe case the writer, after the failure of other means, had recourse again to inhalations of sulphur gas, with prompt success. He cites successful cases of five months in age, and children of varying ages have been cured in this manner. He proceeds as follows:—The patients are dressed in clean linen, and taken from their bedroom to another room. In their absence bedding, furniture, playthings, linen, clothing, everything which the sick-room contained, is so arranged that the fumes of sulphur can penetrate to all. Six and a half drachms of sulphur per cubic metre of air-space in the room are burned, and the fumes allowed to permeate the room for five hours. At evening the child is taken back to the sick-room, and put in a bed which was disinfected. It awakes the next morning cured (*Revue Internationale*, No. 35).—*Therapeutic Gazette*, 15th March 1887.

HYDRASTIS CANADENSIS IN UTERINE HÆMORRHAGE.—Dr Reynold W. Wilcox reports, in the *New York Medical Journal* for 19th February 1887, forty-three cases of various forms of uterine hæmorrhage, in which he has employed the fluid extract of Hydrastis canadensis in doses of 20 drops three or four times a day in a wineglassful of water. The cases included cases of fibromyomata, subinvolution, and hæmorrhagic endometritis, in which the drug was administered continuously, while in other cases of hæmorrhage at the menstrual period he has administered it for ten days before and during this period. He has never used hydrastine and the other alkaloids, through his want of confidence in the constancy of their strength. His conclusions supplement the results of treatment by other writers. He finds that hydrastis checks the bleeding from uterine hæmorrhage, by the production, he believes, of persistent anæmia, unaccompanied by the distressing cramps or the flooding from the alternate contractions and relaxations so often produced by ergot. Its use is therefore preferable in the case of small fibroids, where their expulsion would probably be attended by hæmorrhage or septicæmia. In fungus endometritis, even when curetting has failed to arrest the bleeding, he has obtained remarkable results from the use of hydrastis.—*Therapeutic Gazette*, 15th March 1887.

NAPHTHALIN.—Borelius, of Upsala, gives the results of his clinical uses of naphthalin as follows:—Following the advice of Rossbach, the drug was used in cases of chronic intestinal catarrh with good results when all other means of cure had failed. In abdominal typhus, even when pushed to 4 scruples daily, no effects were obtained. The best results were gained in tuberculosis of the intestines. Three cases, which had presented obstinate abdominal pain and severe general symptoms, were relieved after taking naphthalin with powdered coffee four or five times daily, in doses of 7 or 8 grains. The post-mortem examination in these cases showed the intestinal ulcers clean and in process of healing, and many of them already cicatrized. The urine was often coloured darkly; but in one case only was dysuria observed, which became so severe that the drug was abandoned (*Medicinisch-Chirurgische Rundschan*, 1st January 1887.)—*Therapeutic Gazette*, 15th March 1887.

ANTIFEBRIN.—Eisenhart, in the clinic of Ziemssen in Munich, has used antifebrin, and reports as follows:—The number of cases observed was thirty. The doses given were from 4 to 8 grains, given in powder and solution, by rectal and anal use. In a case of erysipelas a dose of 8 grains was vomited when given by the mouth; when given by injection it was retained. In general the drug was well borne; half of the patients had a profuse perspiration following, and an exanthem occurred in one case. Cases of typhoid treated with antifebrin had an easy course. The influence of the drug was generally manifested two hours after it had been taken. After a dose of 4 grains the temperature sank six times from one-tenth to one degree, thirteen times from one to two degrees, fifteen times from two to three degrees, six times from three to four degrees, and three times more than four degrees. After a dose of 8 grains a depression of temperature of one-tenth to one degree occurred three times, from two to three degrees seven times, from three to four degrees twice, from three to more than four degrees twice. In a few cases only was this effect wanting. In comparison with antipyrin it was found that one-fourth as much antifebrin as antipyrin was required for a given effect. The conclusions of the observer were that in doses of 4 to 8 grains antifebrin was a very valuable febrifuge, reasonably certain of success (*Deutsche Medizinal-Zeitung*, 23rd December 1887).—*Therapeutic Gazette*, 15th March 1887.

COLCHICINE.—At a recent meeting of the Academy of Sciences, MM. Mairet and Combemalle communicated the results of their researches on the effects of colchicine. This drug acts, according to the dose, either as a diuretic or a purgative. The effects produced are more rapid when colchicine is administered subcutaneously. The dose should be from 2 to 3 milligrammes to produce diuresis, and 5 milligrammes when given as purgative. Colchicine increases the excretion of uric acid, and diminishes the quantity of uric acid in the blood. Its accumulation in the system, however, and its highly poisonous nature, make it necessary to use it with caution.—*British Medical Journal*, 26th March 1887.

TO STOP TOOTHACHE.—Gesell-Fels makes the following mixture, which is an oily liquid, and, introduced in the tooth cavity, has proved very effective:—

Camphor, ...	gr. lxxv.
Chloral hydratis, . . .	gr. lxxv.
Cocain muriat., . . .	gr. xv.

M.

—*Therapeutic Gazette*, 15th March 1887.

PERISCOPE OF MEDICINE, CLINICAL AND PATHOLOGICAL.

By G. A. Gibson, M.D., and William Russell, M.D.

The compilers of the Periscope consider it desirable to state that they do not necessarily endorse the views contained in any of the papers from which abstracts have been made.

Simple Ulcer of the Duodenum.—Dr Bucquoy, one of the physicians to the Hôtel-Dieu, gives a long paper on this subject. It is based on five cases, three of which recovered, one was still under observation, and one died. The last had been diagnosed months before death. The first case was that of a woman aged 28, who was extremely anæmic. Some days after admission to hospital she passed from the bowel a large quantity of black blood, and she acknowledged to having passed similar matter at the onset of her illness. The character of the blood showed that it came from the intestine and not the rectum. Tubercular, cancerous, and typhoid ulceration were carefully excluded as a cause of the hæmorrhage, also the possibility of its being vicarious or due to the hæmorrhagic diathesis. The second case was a female, in whom the onset was not well marked. There was a gradual increase of feebleness and malaise, want of appetite, sometimes nausea, and acute pains in the right hypochondrium; she was very anæmic, and presented the ordinary signs and symptoms of marked anæmia. There was pain on pressure over the region of the pylorus corresponding to the seat of the pains from which she had suffered. Soon after admission the nature of the case was further cleared up by the patient passing black and very fœtid matter from the bowel. There may be symptoms of gastric disturbance; and one case was marked by the onset of pain three or four hours after taking food. In some cases the melæna was very profuse. The ulceration presents the appearances which characterize simple gastric ulcer. It occurs in the first part of the duodenum, close to the pyloric orifice of the stomach. It may be on either the anterior or posterior wall, and the ulcers may be multiple. Death commonly results from perforation. Adhesions may form to surrounding parts. Cure may undoubtedly take place. The treatment is dietetic; and for the hæmorrhage, ice internally and externally, and astringents.—*Archives Générales de Médecine*, April 1887.

MALARIA.—Golgi has studied forty cases, and his work confirms the results obtained by Marchiafava and Celli on the *plasmodium malariæ.* The development of the parasite is generally effected in a cycle of three days, which corresponds to the interval between two accessions of quartan type. At the moment of accession the plasmodia, devoid of pigment, are contained in the blood corpuscles. During the two days of apyrexia, until six to ten hours before the succeeding accession, the parasites increase slowly in volume, they fill the blood corpuscles; at the same time they absorb the pigment, after which they quit the corpuscle and become free. The pigment, at first massed at the periphery of the plasmodia, is disseminated more regularly in its substance, then it collects in the centre, forming a distinct nucleus. After this, in the unpigmented peripheral zone, a process of segmentation begins, which results in a number of round corpuscles not pigmented, and in a small mass of pigment. The latter is taken up by the white corpuscles, while the former disappear immediately before the accession of the fever. They accumulate, probably, in the spleen. Then, during the accession and the following day, they appear in the blood as small mobile non-pigmented plasmodia, which again gain entrance to the red corpuscles.—*Arch. für le Scienze Med.* in *Archives Gén. de Méd.*, April 1887.

EXPERIMENTAL MELANEMIA AND MELANOSIS, WITH CONSIDERATIONS ON THE NATURE OF MALARIAL POISON.—The researches of Schwalbe are of interest in their bearing on the preceding paragraph. He says that it is attempted to eliminate *a priori* the hypothesis of a poison to explain the fevers of long duration which follow upon slight exposure to marsh miasm. One night passed in the Pontine Marshes suffices to provoke an illness of long duration. This is sufficient to make us suspect the vital nature of the miasm. But the induction is rash. He asks, Does poisoning by the venom of the serpent not produce organic alterations which persist for years, and can, after a long period of latency, give rise to morbid symptoms? This is also observed in poisoning by oxide of carbon. It is not rare to find in these poisonings both elevation of temperature and glycosuria, as in marsh fever. He holds it an error to consider microbes as the only possible cause of intermittent seizures. The injection of oxysulphide of carbon (COS) into an animal suffices to produce them; while, on the other hand, there are affections, such as gout, in which the fever has this intermittent character, and is yet not due to a micro-organism. He then passes to the question of contagion, and refers to Gerhard's two cases, in which the injection of blood from malarial patients into apparently healthy persons was followed by malarial symptoms after an incubation period of two weeks. Even were these cases quite beyond question, he points out that Fayrer has demonstrated that the blood of an animal poisoned by serpent venom is toxic when injected into another animal. The precise chemical poison Schwalbe seeks to establish. He has made various animals absorb repeated doses of sulphide of carbon, or oxysulphide of carbon dissolved in poppy oil, and he induces thus the alterations in the blood and organs which are present in patients dead of malarial fever.—Virchow's *Arch.* in *Archives Gén. de Méd.*, April 1887.

THE RHYTHMICAL MOVEMENTS OF THE HEART.—MM. G. Sée and Gley, following Kronecker and Schmey, have made a series of experimental investigations into this subject. The latter had found that there existed at the inferior limit of the superior third of the anterior interventricular groove, in the heart of the dog, a point where the nerve fibres crossed, which they believed to be a centre of co-ordination for the movements of the ventricles. When a needle was plunged into this point very intense contractions of the ventricles were immediately produced, but irregular and disordered, of an ataxia character; these speedily became feeble, and became transformed into oscillations or fibrillar tremblings; these soon ceased, the ventricles dilated while the auricles continued to pulsate rhythmically. The blood pressure in the arteries fell to zero, and thereafter the rhythmical function of the ventricles could not be re-established by any means. These experiments bear an important relation to others which had been made by M. Sée and others, showing that angina pectoris is due to an obliteration of the nutrient arteries of the heart. By injection of inert powders into these arteries, or by the ligature of one of them, they produced tremblings identical to those referred to. It is, therefore, permissible to suppose that, following on obliteration of a coronary artery, there may be irritation of the mass of nerve cells placed in the interventricular septum, the contractions of the ventricles already troubled may be transformed into these disordered oscillations—that is to say, excessive—and a fatal issue rapidly follows. —*Gaz. Méd. de Paris*, 2nd April 1887.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

CONSTITUENTS FOR PASTES.—Unna has for a year used silicic acid in the form of an infusorial earth, which has entirely displaced kaolin. This has been introduced into medicine under the name of *Terra silicea*, and is to be had from Reye & Sons, Sonninstrasse 22, Hamburg. It absorbs more water and oily matter than any other dusting powder known to Unna. When rubbed on the skin it produces a most remarkable dryness of the surface. This peculiar power of capillary attraction is explained by the porosity of the tender microscopic silicic plates, of which the infusorial earth consists. The best calcined specimens constitute the purest dusting powder which can be had. It contains no trace of organic matter, and no mineral impurities, which may be present in kaolin or steatite. Vigier recommends steatite, and as a dusting powder he combines it with $\frac{1}{10}$ of sulphite of zinc. It can be employed like starch in the preparation of oil, glycerine, vaseline, or lanoline pastes.—*Monatshefte für praktische Dermatologie*, No. 2, 1887.

THE EVOLUTION OF EPITHELIOMA FROM PSORIASIS.—H. v. Hebra adds another instance of this to the one originally recorded by Cartaz and the three by White. Like these, the psoriasis took on the warty aspect, psoriasis verrucosa, on various parts for some years previous to the development of the cancerous degeneration. The man was otherwise healthy, though his age is not stated. Repeated scraping did not arrest the progress of the disease, which ended fatally. Hebra remarks that all instances of this warty change in psoriasis are to be regarded with suspicion, and watched. Such degenerative changes, too, support the views of Auspitz as to the nature of psoriasis and the inflammatory character of the process.—*Monatshefte für praktische Dermatologie*, No. 1, 1887.

PIGMENTARY SYPHILIDE.—The statements of Neisser, Riehl, and Haslund have favoured the view that the so-called pigmentary syphilide is a leucoderma syphiliticum, the absence, not the increase, of pigment being the disease. But Bockhart relates and figures a case where a macular syphilide became transformed into pigment spots, which, though actively treated by mercury, did not fade; and when seen last, six months after their first appearance, were, though pale, quite well marked. Portions of skin removed from her body showed, besides increased deposit of pigment in the deeper parts of the site, capillary thrombosis, with pigmentary deposits in the cutis and round the vessels. With relation to the failure of mercury to remove the pigment, Bockhart says, quoting Neumann, "that a rapid removal of the pigment is only possible when that is enclosed in exudation cells, while that deposited in connective tissue corpuscles is permanent or very slowly absorbed." —*Monatshefte für praktische Dermatologie*, No. 1, 1887.

RÖTHELN, GERMAN MEASLES.—At a time when this exanthem is prevalent, and therefore liable to be confused with ordinary measles or scarlet fever, the valuable contribution of Atkinson to the January number of the *International Journal of the Medical Sciences* deserves careful perusal. He defines rötheln as a specific, exanthematic, contagious disorder, characterized by a period of incubation, lasting usually from two to three weeks; a prodromal period, varying from a scarcely appreciable period to one day, less commonly two, and very rarely several days; and an eruptive period, in which there is an exanthem closely resembling that of measles. A period of desquamation is in most cases wanting, and when present is but feebly developed. During the attack, and frequently preceding the eruption, there occurs almost constantly an enlargement of the cervical, submaxillary, auricular, suboccipital, and sometimes of other glands, which is often painful, but never suppurative. Catarrhal symptoms are absent, or but slightly marked. A faucial hyperæmia is almost constant, but is rarely accompanied by pain. Throughout the attack fever is absent in about half of the cases, and when present rarely endures to the end of the second day, or exceeds 102°·2 F. The attack seldom lasts longer than three or four days, and the patient rarely keeps to his bed. The affection may prevail sporadically or epidemically, and is contagious, though to a less degree than measles. One attack usually confers immunity from subsequent ones, but does not protect from measles or scarlet fever, nor do these exanthems confer immunity from rötheln. Children are usually affected, though adults have no special insusceptibility. Rötheln is perhaps more apt to be prevalent with or immediately before or after epidemics of measles or scarlet fever, still it has frequently been observed quite independently of these. Such, therefore, may be coincidences without significance. Rötheln and measles are the two disorders most likely to be confused, and a careful consideration of both shows that, while the general points of difference are decided, they will often fail to apply in individual cases. There are no peculiar symptoms upon which a diagnosis can be based with certainty. This fact serves to account for some of the recorded cases in which two attacks of measles have been said to occur to the same person. One point emphasised by Liveing deserves notice, that while on the first day the eruption of rötheln resembles that of measles, on the second it more closely simulates that of scarlet fever.

ECTHYMA OF SUGAR REFINERS.—Rémy and Broca record three cases of this professional malady, which Fredet had already described, and which is interesting from its analogy with certain skin affections observed in the subjects of diabetes. The skin becomes at first red and a little hard, a pustule then rapidly forms, which, when it bursts, leaves a ragged ulcer of considerable size. If attended to at once, the inconvenience is not great; but if the sufferer continues his work, or neglects the sores, these extend, inflame, become painful, and may be followed by lymphangitis. The eruption is observed invariably among new workmen, perhaps because such are apt to commit certain imprudences, and do not, like the experienced, employ sufficient ablutions. It is met with in those who manipulate the melted sugar, and who are exposed to the splashes of the hot liquid, and in those who wade in the cisterns of molasses. The lesions may be confounded with those produced by tertiary syphilis. The cure is simple: removal from the cause, and locally soothing applications.—*Revue de Chirurgie*, September 1886.

DIETETICS OF ECZEMA.—Schweninger is of opinion that the ashes, or dross, remaining in the system, the refuse of incomplete combustion, constitute the causes of eczema from within, as acids, alkalies, water, colouring matters, etc., represent the external ones. In eczema one should place the patient in the first instance on the most simple dietary, and by degrees render it more and more complicated. In the case of each invalid he has always sought methodically to make himself acquainted with those articles of food which are necessary for him, and those which are injurious. The effect of a simple change of regimen occasionally gives surprising results; as by substituting a solid for a liquid dietary, or by making a separation in time of the liquid and solid aliments. In a good many cases there is a real advantage in taking very little nourishment at a time, but very often. Small meals cause less trouble to the circulation than large. Frequently it is advisable to order but a single dish at each meal. This does not necessitate uniformity of alimentation. On the contrary, the most heterogeneous articles may be eaten on one and the same day, provided one only be partaken of at the same meal. The amount of liquid is of much importance. Especially in eczemas of long standing, the author has obtained admirable results by recommending the consumption of as large a quantity of fluid as possible, in fractional doses, but frequently repeated. How otherwise could one eliminate the numerous hurtful products of disintegration? For this reason Schweninger accepts the cures from drinking certain mineral waters. Such simple measures, which naturally vary according to the individual, exert an extremely favourable effect on those eczemas which tend to recur readily and repeatedly.—*Charité Annalen*, 1886.

OCCASIONAL PERISCOPE OF THE DISEASES OF CHILDREN.

By **Charles E. Underhill**, M.B., F.R.C.P.E., Physician to the Royal Hospital for Sick Children.

On Contracting Kidney in Childhood.—R. Förster relates two cases of this rare disease. They occurred in two members, brother and sister, of a highly neurotic family. Their father suffered from tabes dorsalis, and was syphilitic. The boy was noticed to suffer from thirst from earliest infancy, and at the age of 4½ years both the thirst and the quantity of urine passed were constantly in great excess. The specific gravity of the urine varied from 1004 to 1010. It contained at this time no albumen or sugar. Unfortunately they were not looked for subsequently. His weight at this time was 34 lbs., and it remained at this point, or near it, until the time of his death, five years later. His appearance from being one of fairly good health, became gradually changed for the worse. The skin was dry and sallow, and his expression a settled melancholy. He ceased to grow in height, but his intelligence was fairly good. The disease was looked upon as diabetes insipidus, and he was treated with quinine, carbolic acid, iron, arsenic, and other drugs, without any appreciable effect. Shortly before his death he became drowsy and stupid, staggered in his gait, and had increased tendon reflexes. His breathing became rapid without any lung disease, and the pulse was irregular. The sectio showed flattening of the cerebral convolutions, with excess of fluid in the lateral ventricles, and considerable thickening of the enpendyma of the fourth ventricle. The right side of the cerebellum was much larger than the left, and there were some patches of sclerosis in the gray horns of the spinal cord and medulla. The left ventricle of the heart was hypertrophied. The kidneys were very much contracted, especially in the cortical part, and were not larger than those of a child at birth. The capsule was firmly adherent. The disease in the girl began to be marked at about the same age, and followed nearly the same course as in the boy. She died at the age of 8 years. Sectio was not allowed. Occasional traces of albumen were found in the urine. The author remarks that the ætiology of the disease must have a strong connexion with the hereditary family neuroses. The similarity of these cases to those of diabetes insipidus was very marked, although the specific gravity of the urine was rather too high, its quantity perhaps not quite large enough, and the loss of appetite, which was one of the marked features in these cases, is not a common symptom in polyuria.—*Jahrbuch für Kinderheilk.*, B. xxvi., H. 1.

A CASE OF HODGKIN'S DISEASE.—When first observed, the child, aged 12, was in fairly good general health, the only exceptions being a chronic eczema capitis and an enlargement of the cervical glands on the right side of the neck, all the other lymphatic glands being of normal size. The tumour was soft, painless, non-adherent, and "semi-fluctuating," whatever that may mean. Temperature and pulse were normal, and appetite and digestion good. Six months later the eczema was cured, and the tumour in the neck had decreased a little in size; but the glands in the right axilla were found to be enlarged, and the spleen could be felt at the edge of the ribs. From this time a rapid deterioration set in, the child became languid and anæmic, lost appetite, and shortly afterwards was confined to bed. Intermittent febrile attacks next came on, and a soft systolic mitral bruit was developed. The blood was examined and the red corpuscles were diminished; but the hæmocytometer was not used. Attacks of vomiting and diarrhœa set in, and the strength rapidly waned. Transfusion was resorted to without any beneficial result, and the patient died eleven months after she first came under observation. A sectio showed the lungs to be adherent at the apices, with a few small caseous nodules; serous fluid in pleural and pericardial sacs; liver, large, pale, and fatty; mesenteric glands greatly hypertrophied; spleen much enlarged, and containing, scattered throughout its substance, a large number of firm nodules, varying in size from a pea to a nut; they were surrounded by a thick, firm capsule. Microscopic examination of the tumours showed them to be soft malignant lymphomata. —F. Forchheimer, *Arch. of Pediatrics*, October 1886.

ON SOME POINTS IN CONNEXION WITH RAYNAUD'S DISEASE.—The special point of interest in this paper is the association which was found in two cases under the author's care to exist between Raynaud's disease and hæmoglobinuria. In the one case, a child, 3 years of age, this relation was particularly well marked. Each attack of the coldness and blueness of the extremities—and these attacks were often very characteristic—was followed by the passing of dark-red urine, which presented all the appearances peculiar to paroxysmal hæmoglobinuria. In the second case the same connexion was traced; whenever the boy's feet got cold and blue, he passed blood in his water. The author believes there is an intimate relation between these two disorders, if they are not actually identical, and ascribes them both to intermittent arterial spasm. An additional piece of evidence in favour of this view is given in the presence of some yellowness of the conjunctiva in the case first mentioned, this being apparently the result of arterial spasm of the hepatic vessels.—J. Abercrombie, M.D., *Arch. of Pediatrics*, Oct. 1886.

OSTEOMYELITIS OF THE LONG BONES OF THE HANDS AND FEET (SPINA VENTOSA) IN ITS RELATION TO TUBERCULOSIS.—The object of the author in this investigation was to discover whether the so-called spina ventosa of the hands and feet is or is not a manifestation of tuberculosis. To answer this question he took five cases of the disease, in which there was no appearance of tuberculosis in any of the viscera, so far as could be made out. Having scraped the interior of the growths, he examined the granulation tissue thus obtained under the microscope, and in each case he found tubercle bacilli to be present, though always in exceedingly small quantity. To carry the matter further, he inserted a small particle of the granulation tissue into the abdominal cavity of guinea pigs, one for each case; and as a control experiment he made an opening into the abdomen of other guinea pigs at the same time, without inserting anything into it. The wounds were sewn up, and the animals were carefully watched. All the animals in whom any of the suspected tissue was inserted became tuberculous; three of them died of the tubercular disease, the other two were killed before the disease had become fatal. On microscopic examination of their tissues, tubercle bacilli were found plentifully in every case—while the other guinea pigs in whom none of the tissue was inserted were found to be perfectly healthy. From these experiments, which seem to have been carried out with much care, he concludes that spina ventosa is distinctly a local manifestation of tubercle, and can no longer be referred to the less serious category of scrofula. The paper contains a sketch of previous experiments connected with the same question.—H. Renken, *Jahrbuch für Kinderheilk.*, B. xxv., H. 3.

ON PURPURA FULMINANS.—Henoch relates four cases of what he looks upon as a new disease. Two of them he observed himself, the third was published by Chanon, and the fourth by Michaelis. The children varied from 9 months to 5 years of age, and they all died. In one of the cases the disease came on after croupous pneumonia, in another after scarlatina; in the other two there was no antecedent acute disease. The special features of these cases are their rapid course (one to four days), with uniformly fatal issue; the outbreak of spots upon the skin, at first small and red, but speedily enlarging, and spreading into confluent black ecchymoses, which even embraced the whole of the extremities; the formation of sanguineous blebs, without any appearance of gangrene; while they were not attended by any disease of the mucous membranes or of the kidneys, or, in fact, by any other complication, as was proved in three of the cases by section. The author cannot so far give any explanation of these cases.—Ed. Henoch, *Berlin. kl. Wochensch.*, 1887, No. 1.

THE INFLUENCE OF MATERNAL IMPRESSIONS IN THE ETIOLOGY OF CONGENITAL DEFORMITIES.—The author, with some misgivings, "hopes to demonstrate that there are certain elements of plausibility in the assumption, that the development of the fœtus *in utero* may be influenced, for weal or for woe, by the mental processes of the mother." With this object he has collected, from various sources, some 200 observations, of which he relates a few of the most striking, where strong mental impressions made upon the mother at various periods of pregnancy were followed by deformities in the child, corresponding more or less closely with the appearances which caused the shock. Perhaps the most remarkable of these are two cases related by Le Gros Clark. The mother in each instance was, at about the time she became pregnant, strongly and disagreeably impressed by representations of the "double-headed nightingale," who was then on exhibition. The fœtus in each case was double as to its upper portion, and resembled the monstrosity which was the cause of the mental impression. While fully recognising the strength of the negative evidence so often adduced in disproof of his theory, he holds that the great number of positive and well-authenticated cases reported can only be explained on the supposition that the mental processes of the mother have some influence upon the development of the fœtus. He points out the strong analogy between these cases and those in which children nursing at the breast have been thrown into convulsions, or even killed, by sudden and violent mental emotion on the part of the mother. And he supports this part of the argument by the case of congenital idiocy, which, he says, is acknowledged by many authorities to be the result very frequently of temporary violent emotion or more prolonged mental disturbance in the mother; and idiocy is almost always associated with defective development of the brain. As to the *modus operandi*, he adopts Dalton's suggestion that nervous impressions may produce changes in the placental circulation, and so affect the nutrition of the fœtus, just as they may disturb the circulation in the brain, the face, or the lungs; but he reserves this part of the subject for a future paper.—T. L. Stedman, M.D., *New York Medical Record*, 1st January 1887.

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.—The following gentlemen passed their final examination for the degree in Medicine at the sittings held on 8th April 1887, and were admitted L.R.C.P. Ed.—Gerald Callender, London; Robert Frank Wrentmore-Tucker, Bristol; William Henry Francis Farmer, London; Davis Allan Waite, London; John Francis Bridgwood, Stafford.

UNIVERSITY OF GLASGOW.—Degrees of M.B. and C.M.—The following gentlemen passed their third professional examination in April 1887:—Robert Banks, Gilbert A. Bannatyne, Thomas L. Blackburn, Alexander Blair, Matthew H. Bland, Robert M. Buchanan, John Charles, Andrew Copland, Herbert O. Cowen, William Gemmell, J. Paterson Gillespie, Arthur H. Jago, John S. M'Conville, M.A., James M'Glashan, John Melville, Thomas K. Monro, M.A., Charles R. Niven, Frederick L. Norris, William R. Paton, Robert L. Pinkerton, M.A., John S. Rankin, William Robb, John Sandilands, M.A., James Wallace, James P. Wilson. Richard J. Wylie, James Young. The following have also passed in Pathology:—Michael A. Boyle, Thomas Cameron, Archibald Campbell, David Curle, Archibald Gunn, Charles H. Hallett, Wm. Cowan Hamilton, Edward O. Harrison, Thomas Wm. Hay, Andrew Innes, Thomas W. Jenkins, M.A., Hugh Kirkland, Thomas Laird, Ebenezer Lang, John M'Kendrick, Hugh R. Sloan, Charles M. Wildridge.

IN consequence of the death of Dr Haldane, the office of Assessor in the University Court to represent the General Council of the University is vacant. Dr HERON WATSON and Sir ALEXANDER CHRISTISON have been proposed, and a poll of the Council is to be taken. As representing the views of the Council on extending the basis of University teaching, Dr HERON WATSON'S claims seem to us pre-eminent, and his great knowledge of all that concerns medical legislation will render his services most valuable.

WE observe with pleasure that Dr David Grant has been elected Lecturer on Medical Botany, Materia Medica, and Therapeutics in the University of Melbourne. He is a Master of Arts and a Bachelor of Medicine of the University of Edinburgh, and was awarded the "Ettles Prize" on taking his medical degrees in 1876. He held in succession the posts of resident physician in the Royal Infirmary of Edinburgh, resident medical officer to the National Hospital at Ventnor, resident medical officer to the Convalescent Hospital at Cheadle, and resident medical officer to the Manchester Royal Infirmary. While in Manchester his health broke down, and he was obliged to seek a warmer climate, where we are glad to see a brilliant career opening before him.

WE would draw the attention of our readers to what may prove invaluable to many of them—namely, type-writing. By means of this system authors can see what their productions look like before handing them over to the compositor. The advantages of this are self-evident. Proof correcting is the bane of publication, as many can testify, especially in the Medical World. By having MS. typed before sending it to the press, much time and more expense are saved, as all errors and mistakes can be rectified before the compositor begins the setting up, and the clearness of the proof, which reads as easily as print, enables him to achieve his work in a tenth of the time that he would require to decipher MS. which is too often crabbed and illegible. Thus the costs for corrections, which often form the largest item in the publisher's bill, are reduced to a minimum. To others, also, the type-writer offers many advantages—lectures, theses, etc., when typed, are much more taking than MS.; and in cases where a small number of copies may be required, as for presentation to libraries, etc., the type-writer reigns supreme, for who would print a dozen copies of a thesis. Many who have felt the need of such a system are now seeking the aid of The Edinburgh Type-Writing Office, which was opened last year at 8 York Buildings, Queen Street.

GEDDES' FLUID EXTRACT OF HEMLOCK BARK.—We have received a sample of this preparation, and can confidently recommend it to the notice of the profession as a powerful and useful hæmostatic, especially when applied externally. The name is very unfortunate, as it is apt to be confounded with *Conium maculatum*, the plant known in this country as *Hemlock*. This preparation, however, is from a species of pine, Abies canadensis, *Michaux;* Pinus canadensis, *Linn;* Picea canadensis, *Link*. It contains a large amount of tannin, and is much used in America under the name of "Extract of Hemlock Bark." As a local astringent it will be found very efficacious and safe. "It is of the consistency of thick syrup, is soluble in water, contains no alcohol, and does not ferment." It is therefore a preparation which will be found of great service in the treatment of cases requiring a local astringent.

"TABLOIDS" OF COMPRESSED STROPHANTHUS (Burroughs, Wellcome, & Co., London).—Each "tabloid" contains 2 minims of the tincture of Strophanthus. Dose, 1 to 4 tabloids to be swallowed with water. In a recent number we spoke highly of the *Tincture* of Strophanthus as prepared by Burroughs, Wellcome, & Co., and we have equal pleasure in highly commending the "tabloids" to the notice of the profession.

SCOTTISH MEDIÆVAL SURGERY?—The ninth king of Scots, if we may believe the early chroniclers, rendered his reign memorable by the high honour in which he held physicians. It was in Ireland, where he spent years of exile with his father, says Buchanan, that he became familiar with medicine and its practitioners. When settled on the throne of Scotland, he so inspired the courtiers with his medical tastes, that the healing art, particularly surgery, became quite a patrician accomplishment, and for centuries afterwards "nemo esset in Scotia illustriore loco natus, qui vulnerum curationem non teneret." Even down to the sixteenth century surgery, especially military surgery, was a *métier* in which the Scottish aristocracy were proficient. The gallant King James IV. pursued, according to Buchanan, the traditional practice of his race and ancestry with much zeal. "Unum e vetusta gentis consuetudine hausit avide, ut vulnera scientissime tractaret; cujus rei peritia toti Scotorum Nobilitati, ut hominibus in armis assidue viventibus, fuerat priscis temporibus communis." (One thing he imbibed eagerly from the ancient custom of the Scots—to wit, the thoroughly scientific treatment of wounds: a department in which, from remote times, the whole Scottish nobility, as men living constantly under arms, had shared a common skill.)

OBITUARY.

DANIEL RUTHERFORD HALDANE, M.D., LL.D., F.R.S.E.

SINCE our last issue we regret having to record the death of Daniel Rutherford Haldane, M.D., LL.D., F.R.S.E., and Vice-President of the Royal College of Physicians—one of the most highly gifted, well known, and respected members of the medical profession in Edinburgh, where he was deservedly held in high estimation, both in a professional and social point of view. Dr Haldane at the time of his decease was 63 years of age, and the circumstances of his death were of a peculiarly painful nature. Some years ago he sustained a fracture of the left leg, from which he made a rapid and complete recovery. On the present occasion his accident was of a similar nature. Shortly after leaving his own house in Charlotte Square on last Christmas day his foot slipped on the pavement, which was covered with ice, and in falling he broke the lower part of his right leg, a little way above the ankle. He was assisted home, and the injured limb was at once attended to by Dr Patrick Heron Watson, who had charge of the case up to the period of Dr Haldane's death. Dr John Wyllie was also in attendance. At first it appeared that a satisfactory and complete recovery might be expected, but symptoms of obstruction to the circulation below the seat of the injury soon manifested themselves,—these and other complications latterly leading to a complete collapse of the system, which terminated in a fatal result early on the morning of Tuesday, 12th April.

Dr Rutherford Haldane was a son of James Alexander Haldane, who has been sometimes called the "Whitefield" of Scotland. James Haldane belonged to the Haldanes of Gleneagles, but it was as an evangelist, and as practically the founder of the Congregationalist Body in Scotland, that he will be longest remembered. Young Haldane was educated at the High School of Edinburgh, and afterwards entered the University, where he studied until obtaining his medical degree. He was endowed with more than average powers, and generally topped the lists at the examinations. This was not only the case as a schoolboy, but as a medical student, when he was noticeable for his great power of application and his facility for the acquirement of knowledge,—talents which were fully recognised both by his teachers and his compeers. He became an M.D. in 1848, on which occasion a gold medal was awarded him for his thesis on Diseases of the Liver; and he subsequently went abroad for the purpose of further study at the great schools of Vienna and Paris, the latter at that time being in great repute as a seat of medical and surgical instruction. Previous to going abroad, Dr Haldane had served as a Resident Physician in the Royal Infirmary of Edinburgh; and on his return from Paris, where he had been for eighteen months—during which time the memorable events of one of the great revolutionary outbreaks had occurred in the French capital—he was again appointed House Physician to the Infirmary under a new arrangement, in connexion with the Clinical Department of the University. Not long after this he was elected to the position of Physician to the Royal Public and the New Town Dispensaries, and subsequently to this he became a Lecturer on Medical Jurisprudence, Pathologist to the Royal Infirmary, and Teacher of Pathology and Morbid Anatomy in the Extra-Mural School at Surgeons' Hall, which latter appointments he held for upwards of nine years. On the retirement of Dr Alexander Wood from his lectureship at the College of Surgeons, Dr Haldane began to lecture on the Practice of Physic; and now holding the post of one of the Ordinary Physicians to the Infirmary, he became also a Lecturer on Clinical Medicine. His classes were very popular with the students, and were always largely attended; for he had the reputation even among not a few distinguished men who were his colleagues, and in some cases his rivals in lecturing at the time, of being one of the best teachers a student could be under.

In an address presented to him in 1876 by 300 of his former pupils, and among whom will be found the names of many of our best known younger practitioners, his powers of quick and accurate diagnosis, the clear and succinct character of his lectures, the grace and incisive eloquence of his style, and his vivid powers of description were markedly recognised; while his large classes from year to year attested his success as a teacher and his attractions as a lecturer on whatever subject he chose to take up.

In 1852 he was elected a Fellow of the Royal College of Physicians of Edinburgh, and ever manifested a deep interest in the affairs of that body, where he afterwards held successively the offices of Secretary and President. During his tenure of office as Secretary, which lasted for over sixteen years, he took a very important part in promoting the scheme, under which the Royal Colleges of Physicians and Surgeons of Edinburgh, and the Royal College of Physicians of Edinburgh with the Faculty of Physicians and Surgeons, Glasgow, arranged to grant a conjoint examination and diploma to their students, known as the Double Qualification. For his labours on behalf of the College in the institution of this diploma, a handsome service of silver plate was presented to him. Besides these, Dr Haldane, up to the close of his life, held several other important honorary and other medical appointments. He succeeded Dr Wood as Representative of the Royal College of Physicians at the General Council of Medical Education, where he at once took a high and leading position in its deliberations, which office he held till his death. He was also Assessor of the General Council of Edinburgh University at the University Court, and was by that Court appointed in 1875 an Examiner in Clinical Medicine. Latterly, he was Consulting Physician to the Royal Infirmary, and also Representative of the College of Physicians at the Infirmary Board; and on the occasion of the celebration of the Tercentenary festival of the Edinburgh University, his *alma mater* acknowledged his merits and abilities by conferring upon him the honorary degree of LL.D.

As a medical man Dr Haldane was held in high esteem. With such a career of public usefulness, and discharging the duties of so many onerous situations as he filled, it must be obvious that he could not devote himself to any very great extent to medical practice, were it even of a purely consulting nature. Fortunately for himself, his circumstances were such that even in his earlier days Dr Haldane did not require to cultivate the calling of a general practitioner, and he, therefore, rather took to the teaching and consulting aspects of his profession, for both of which he was by nature and by the possession of many accomplishments eminently fitted. His literary contributions to the science of medicine partook more of the nature of occasional practical papers, read before the various professional bodies and associations, than of any voluminous or speculative communications upon the general subject. Many of these were the outcome of his researches in the Pathological Department of the Infirmary, and constituted in not a few cases interesting additions to our knowledge of diseases of the heart, nervous system, and alimentary canal. While giving all due weight, however, to the rapid progress of modern pathology and diagnosis in their probable future results on the treatment of disease, he held that an important part would yet be played by an advanced knowledge of therapeutics. The theory found some favour with him, that medicines would yet be discovered capable of being used as agents acting in a specific manner upon the different tissues and organs of the body, and thus acquire a power of absolutely *curing* a disease; and in a lecture delivered before the Royal College of Surgeons of Edinburgh in 1865, he concludes with the following remarks:—"Therapeutics in its future progress may not follow the direction I have ventured to indicate, or it may advance by some other path, ... but we may safely look forward to a period when we shall be able to undertake a more equal struggle with disease, a period when the success of the physician shall be more nearly than at present on a level with his intentions."

By his professional brethren he was looked up to as an authority on all medical questions, especially on matters pertaining to medical legislation. Cautious, clear-sighted, and confident in his own conclusions, he was not easily swayed or diverted from any opinions at which he had arrived. An able linguist and a great reader, he kept abreast of his age in all matters relating to his profession, and his knowledge was ever at the service of those who sought it. In private, he was a man of great simplicity of manner, given to hospitality, and held in high repute by all who knew him. Of a genial, clubable nature, his place will be difficult to fill at the various professional re-unions and social gatherings of Edinburgh, and his death will for long cause a great blank in medical circles. Of late years he had taken considerable interest in the movement leading to a still closer conjunction of the three Scottish corporations in giving a joint examination and diploma, and establishing what now exists as the Triple Qualification; and at the time of his death he was a member of the Committee of Management for this Board. On the expiry of Sir Lyon Playfair's services as Member for the University, Dr Haldane was strongly pressed to allow himself to be proposed as his successor—an honour, however, which he declined.

For a number of years Dr Haldane edited this Journal with ability and success, at first in conjunction with his friend the late Professor Sanders, and afterwards single-handed.

Dr Haldane married Miss Lowthorpe, a lady of Yorkshire family, and grand-daughter of Mr Lowthorpe of Welton Hall, who still lives to mourn his loss.

One son, Lieutenant Aylmer Haldane of the Gordon Highlanders, and four daughters also survive him. The President and Council of the Royal College of Physicians, the President and Vice-President of the Royal College of Surgeons, and a number of the Fellows of both Colleges, along with a very large assemblage of the general public, attended his funeral, which took place on the afternoon of the 14th—service being conducted in St Mary's Cathedral, as well as at the interment in the Dean Cemetery, by the Bishop of the Diocese.

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Part First.

ORIGINAL COMMUNICATIONS.

I.—ON THE EVOLUTION OF CARDIAC DIAGNOSIS FROM HARVEY'S DAYS TILL NOW.

By George W. Balfour, M.D., Consulting Physician, Royal Infirmary, Edinburgh.

(*Being the Harveian Discourse for* 1887.)

Each generation, as it enters upon that inheritance of knowledge which broadens ever with the ages, can only dimly realize the slow and laborious manner in which that knowledge has been acquired, and the difficulty that has been experienced in determining the true character of phenomena which seem so simple and self-evident. There is probably no part of medical knowledge of which this is so true, as of that which relates to diseases of the heart, and there could not be a more appropriate occasion than the present for narrating the evolution of the diagnosis of these diseases, seeing that we are met to do honour to the memory of Harvey, by whom the heart has been revealed as the centre of the circulation, and a cardiac pathology has been made possible.

For more than 200 years Harvey's great discovery remained barren and useless to mankind for want of means of obtaining information as to the size of the heart and the state of its orifices. Now-a-days, when we can approach the heart from all sides, and ascertain its dimensions, the condition of its walls, and the state of its orifices, with a precision which is almost perfect, we can scarcely realize the state of chaos into which an ignorance of percussion and auscultation would plunge us.

The symptoms of advanced disease of the heart are so evident and remarkable that they could not escape recognition, and the story of Antiochus and Erasistratus shows that even functional affections of the heart were not beyond the ken of our professional forefathers,[1] yet their ignorance of anatomy and physiology makes their observations of little value. Even after the discovery of the circulation, practitioners only thought of how they could cause the blood to circulate more freely, how they could destroy its viscosity, and draw off from the body that which was supposed to be corrupted.[1] But it was not until the dissection of the human body became more general that definite symptoms became associated with definite organic lesions, and the diagnosis of diseases of the heart began to be possible.[2] In making this diagnosis, our professional forefathers had to rely solely upon the *symptoms* complained of, and the *inspection* and *palpation* of the patient. But they made a good use of what they had, and if their success was not always equal to their deserts, this was more often due to ignorance of pathology than to inaccuracy of observation. About the middle of last century, Senac published his admirable work upon the *Anatomy, Physiology, and Diseases of the Heart*, which for more than fifty years was the great authority upon all these points, but especially on the diseases of the heart, for Senac was a great clinicist, and studied anatomy and physiology solely for clinical purposes. From this work we learn the difficulties that beset cardiac diagnosis in these early days, and how ably these were overcome by a skilful physician. Among the general symptoms, *breathlessness* was one usually credited to the heart, and only referred to other causes when the pulse was found to be quiet and regular during the intervals of the paroxysms. The occasional presence of *dropsy* as an accompaniment of heart complaint was well known, but no idea seems to have been entertained of the true relations between them. The *pulse* afforded important information, its *rhythm* and *rate*—*la marche*—being looked upon as indicating the character of the cardiac movements. Feebleness and irregularity of the pulse, especially if increased by bodily movement or by repletion of the stomach, were regarded as indicating some obstacle to the circulation within the heart. *Palpitation* was recognised as a symptom of heart disease, but it was also known to be a symptom of dyspepsia, gout, and hysteria, and even to be the occasional result of tight lacing. The size of the heart could not be accurately determined, but it was suspected to be enlarged when the extent and force of its pulsation were found to be greater than normal. Unusual pulsation in the upper part of the chest was referred to enlargement (aneurism) of the aorta; unusual pulsation in the lower part, in the ordinary cardiac area, was referred to enlargement of the heart itself. The right side of the heart was presumed to be affected when the impulse was not forcible, when there was no great palpitation, but merely a sense of suffocation, and when the veins of the neck were seen to pulsate. On the other hand, the left side of the heart was supposed to be the seat of dilatation when the veins of the neck did not pulsate, when the heart's impulse was unusually forcible, when there was frequent palpitation, and especially when the pulse was large and full, and not weak, thready, and irregular.[1] It is obvious that it required no little knowledge of topographical anatomy, besides skill in inspection, palpation, and in the interpretation of the signs and of the symptoms, before even these very general details could be made out, and they were quite undiscoverable until the disease was far advanced. For these and other reasons, the little the physicians of those days could make out about the heart was but of small use to the patient, and there was ample room for the most egregious mistakes, for which an erroneous pathology was perhaps as much to blame as an imperfect diagnosis. "I possess," says Senac, "the record of thirty consultations of the most celebrated physicians of Paris; all of them attribute the palpitations of which they speak to an inspissation of the blood (in the lungs), while they are really due to an affection of the heart. I shall give three of them taken by chance. M. de P. had a heart as big as a man's head, and an aneurism of the aorta: the doctors decided that inspissation of the blood was the cause of his palpitations. M. had a large aneurism of the aorta: the violent pulsations were only due to the 'vapours,' according to the physicians. M. D. R. had a pleuritic effusion: it was the thickened blood that agitated the heart; he died immediately after a consultation, at which remedies were prescribed which were to be continued for the next two months."[2]

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[1] *Valerius Maximus*, liber v. cap. 7.

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[1] *Sketch of the Revolutions of Medical Science*, by P. J. G. Cabanis. Translated by A. Henderson, M.D. London, 1806. P. 152.

[2] Vieussens, Albertini, Bonetus, and Lancisi, to the latter of whom we owe the earliest observations on pulsation of the veins, may be mentioned as pioneers in this work. But Morgagni's great work is of exceptional interest and value. In the five last chapters of the second book there are about one hundred and fifty cases narrated of diseases of the heart and large vessels, some of them of great rarity. Vide *De Sedibus et Causis Morborum*, etc. Venetiis, 1763. P. 235, etc.

Senac continued to be the great authority on cardiac disease till the beginning of this century, when Corvisart took his place.

Baron Corvisart was first physician to Napoleon the Great, a man of great modesty, sagacity, and diagnostic skill. He looked upon the human body as a machine, the diseases of which were to be unravelled, not by any vague reference to the principle of life,[3] but by a careful study of the anatomy, physiology, and physics of the body.[4] He translated into French Auenbrugger's work on Percussion,[5] and was one of the first to apply its principles in the detection of enlargement of the heart, etc. He discovered the *fremissement cataire*, or purring thrill, and connected it directly with stenosis of the cardiac orifices. But he could not differentiate stenosis of the mitral opening from that of the aorta, and he made an unlucky blunder, instead of a lucky hit, by describing the coincidence of the purring thrill with an irregular pulse as perfectly infallible signs of stenosis of the aortic orifice,[1] when they are really certain indications of mitral stenosis, and are absent, or at all events not coincident, in cases of aortic constriction. The little that Corvisart knew of auscultation, and the little use it was to any one at that time, may be guessed from a remark he makes as to some authors stating that, in certain diseases of the heart, they could hear the loud sound produced by the violent pulsations of that organ at some distance from the patients. "I," he says, "have been unable to verify this statement myself, as I have only been able to hear these pulsations—*ces battements*—when my ear was close to the patient's chest."[2] But a change was coming; at the very time that Corvisart wrote these words, the mournful wail of Baglivi, "Oh! quantum difficile est curare morbos pulmonum, oh! quanto difficilius eosdem cognoscere," was being answered by the glad Eureka of Laennec,[3] and lo!

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[1] *Traité de la structure du cœur, de son action, et de ses maladies*, par M. Senac, médecin consultant du Roy. Paris, 1749. Tome second, livre quatrième, chapitre iv.

[2] *Op. cit.*, p. 491.

[3] Heberden, one of the ablest physicians of last century, was in the habit of stating as an aphorism to his pupils, that the great desideratum in medical science was the determination of the nature of the vital principle by which all that goes on in the living body is regulated and governed.

[4] *Essai sur les maladies et les lesions organiques du cœur et des gros vaisseaux*, par J. N. Corvisart, Baron, etc. Paris, 1806. I quote, however, from the 3rd edition, published in 1818. *Vide* Préliminaire, p. 19.

[5] *Inventum novum ex Percussione Thoracis humani, ut signo abstrusos pectoris morbos detegendi.* Vindobonæ, 1761. Auenbrugger employed percussion very successfully in the detection of enlargements of the heart, but none of his contemporaries adopted it, and the art remained useless to mankind till Corvisart took it up.

"The grave physician
By the trembling patient stands,
Like some deftly skilled musician
Strange! the trumpet in his hands,"

and not the secrets of the lungs only, but of the heart also, lay open to his listening ear. Laennec, on listening over the heart, heard not pulsations merely, but two distinct sounds. The duller and more prolonged of these is heard loudest at the apex—this he called the first sound, and ascribed it to the contraction of the ventricles; the other sound is shorter, clearer, and heard loudest over the base—this he called the second sound, and ascribed it to the contraction of the auricles. In cases of disease Laennec found that these sounds were replaced by what he called a bellows murmur, the tone of which might be variously modified. This bellows murmur he at first supposed to be due to constriction of one or other of the cardiac orifices, but he gave up this idea on account of the many contradictory exceptions he met with; many cases of constriction found after death having been entirely free from any bellows murmur during life; while in other cases the heart and arteries were found apparently perfectly healthy after death, though during life the heart's sounds had been replaced by a loud bellows murmur. Laennec, therefore, came to the conclusion that whatever the character of a bellows murmur, it was entirely due to spasm of the heart or arteries,[1] and he supported this view by the statement that "the circumstances under which the bellows sound arises, and the rapidity with which it appears and disappears in some cases, seem to point it out as being under the immediate influence of the nervous power."[2] Laennec pointed out that in examining the heart, its movements should be studied under "four principal heads, viz.—1st, The extent over which they can be heard by the stethoscope; 2nd, The shock or impulse communicated by them; 3rd, The nature and intensity of the sound; and 4th, Their order or rhythm;"[3] and to his discovery and to his directions we owe all the advances in the diagnosis of disease of the heart that have since been made.

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[1] Corvisart, *op. cit.*, pp. 240–41.

[2] *Op. cit.*, p. 396.

[3] Laennec made the discovery of mediate auscultation in 1816; he communicated it to the Academy of Sciences in June 1818, and he published his first edition in September 1819. I quote from *A Treatise on Diseases of the Chest, and on Mediate Auscultation*, by R. T. H. Laennec, M.D. Translated by John Forbes, M.D. London, 1834. 4th edition.

Laennec's immediate successors were not, however, long of giving up the theory of spasm as a cause of the bellows murmur, and reverting to that of constriction or obstruction, and this theory they employed with wonderful success in the diagnosis of cardiac disease. True, they could never be sure of hitting upon the right orifice; but if they had a case showing the general symptoms of cardiac disease, and a bellows murmur in one or other of its varieties audible over the cardiac area, they were pretty sure of finding one or other of the orifices obstructed, and that was considered a most excellent diagnosis.[4] It was, indeed, a long step beyond the utmost possibilities of the previous century, and it was not possible to go beyond this until the causes of the sounds of the heart had been determined, and these could not be settled till the rhythm of the cardiac movements had been accurately ascertained. But the difficulty that lay in way of settling what was the true rhythm of the cardiac movements may be guessed at by the mere mention of the names of Stokes, Beau, and Corrigan, as supporters of the theory that the impulse of the heart on the chest wall—the apex beat—took place during the diastole of the ventricles.[5] The first step in the direction of settling this rhythm was taken by the late Mr J. W. Turner, Professor of Surgery in Edinburgh, who pointed out that the second sound could not possibly be due to the contraction of the auricles, because this contraction followed the long pause as described by Harvey and by Haller, while the second sound preceded that pause. Turner's own conjecture as to the cause of the second sound was not a happy one—he thought it was caused by the falling back of the heart into the pericardium.[1]

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[1] *Op. cit.*, p. 519. [2] *Op. cit.*, p. 520. [3] *Op. cit.*, p. 495.

[4] Vide *Traité des maladies du cœur et des gros vaisseaux*, par R. J. Bertin, rédigé par J. Bouilland, Paris, 1824, p. 226; and *Traité clinique des maladies du cœur*, par J. Bouilland, Paris, 1835, tome ii. p. 216.

[5] *Vide* Dr David Barry's *Dissertation sur le passage du sang à travers le cœur*, Paris, 1827. M. Pigeaux, *Archives Générales de médecine*, 1832, tome xxx. p. 356, etc. Stokes and Hart, *Edin. Med. and Surg. Jour.*, 1830, p. 271. Corrigan, *Dublin Medical Transactions*, 1830, vol i. p. 201. Beau, *Lancet*, Feb. 1836, p. 827. Corrigan bases his views largely on the want of synchronism between the apex beat and the pulse; "are they ever synchronous?" he says "they are not. I know that my readers will be startled by this assertion, for all physiologists assert they are." Erasistratus knew better,—*vide* Galen, *De puls. diff.*, lib. i. cap. 25, and Galen, *De causis puls.*, lib. ii. cap. 8. But, indeed, a late distinguished London physician fell into the same trap, and published a case in which the slow heaving impulse of a heart nearly double the normal size was thought to be diastolic, because it was not synchronous with the pulse. Vide *Brit. Med. Jour.*, 1870, vol. ii. p. 82, etc.

The second sound of the heart was entirely unknown to the ancients, and was first revealed by the stethoscope of Laennec; and the first to surmise, I might almost say discover (for it only wanted practical proof to make it a discovery) its real nature was a Scotch country practitioner, still alive, Dr Mathew Baillie Gairdner, late of Crieff. In a very excellent paper, *On the Impulse and Sounds of the Heart*, read to Royal Medical Society during the session 1829-30, Dr Gairdner shows himself to be thoroughly acquainted with all the knowledge of the day in regard to his subject, and reasons out very carefully his idea, that the second sound of the heart must be due to the closure of the semilunar valves by the reaction of the aorta and pulmonary artery upon the blood-wave passing through them.[2] This theory was shortly afterwards confirmed by direct experiments instituted for the discovery of the true causes of the sounds of the heart, the earliest of these being credited to Dr C. J. B. Williams,[3] so that for nearly fifty years past the closure of the semilunar valves has been almost universally acknowleged as the cause of the second sound.

From time immemorial the first sound of the heart has been regarded as due to the systolic impulse of the heart on the chest wall by all but the handful of dissentients already mentioned, who looked upon this as diastolic. Most of these, however, were not long of recanting their heresy so far as to adopt the systolic character of both sound and impulse, but the profession generally were so little agreed as to the true cause of this first sound that about twenty different theories regarding it have been placed on record. Rouanet[1] of Paris and Billings[2] of London both about the same time propounded the doctrine that the first sound was due to the closure of the auriculo-ventricular valves during the ventricular systole, and this may be looked upon as the practical settlement of the question, though the sound of muscular contraction and the shock of the heart on the chest wall undoubtedly take part in the production of the first sound.

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[1] *Edinburgh Medico-Chirurgical Transactions*, vol. iii., 1828, p. 205.

[2] Dr Gairdner never published this paper, but it is extant in the records of the Royal Medical Society, and it formed his graduation thesis in 1830. The late Dr Alison acknowledges that Dr Gairdner was the first to conjecture that the second sound of the heart was due to the closure of the semilunar valves. Vide *Outlines of Physiology*. Edinburgh, 1839. 3rd edition, p. 50.

[3] There was, as every one knows, a dispute as to priority in these experiments between Drs Hope and Williams. In making the above statement I have followed the late Professor John Reid, who, as an intelligent contemporary, may be presumed to know, and who, in reference to the causation of the second sound by the closure of the semilunar valves, says, "it is, however, to Dr C. J. B. Williams that we owe the first direct experiments in support of it." Vide *Cyclopædia of Anatomy and Physiology*, vol. ii., article "Heart," p. 617.

The valve theory of both sounds of the heart is a good working hypothesis, it has a reasonable foundation in experiment, and the deductions from it are applicable, and are sufficient for the diagnosis of all the valvular lesions of the heart. It is not, however, even now the only one in the field, for within the last twenty years Dr Arthur Leared has gone back to the older views. "In short," he says, "vibration of valves or other structures, when in contact with blood, has no more to do with the sounds (of the heart) than the vibration of a door with the sound produced by the passage of the wind through its keyhole. The sounds are in the one case due to rapid motions in the air itself, and in the other to rapid motions in the blood itself."[3]

The experimental proof obtained of the connexion between the sounds of the heart and the closure of its valves was also associated with proof that injury to these valves gave rise to a bellows murmur,[4] hence an immediate attempt was made to connect the various abnormal sounds or murmurs with different lesions of the several valves. Hope was the first to make a vigorous attempt in this direction; even in the first edition (1832) of his work he laid down rules for the detection of murmurs due to regurgitation as well as of those due to obstruction; these were not so accurate as they might have been, but they were the earliest available.[5] In the third edition of his work (1839) these rules are considerably improved,[6] but they still want distinction and accuracy, and especially that corroboration from other signs and symptoms to be found by this time elsewhere. To Hope we undoubtedly owe the first attempt to employ the laws of physics in detecting the condition of the several cardiac orifices, and it was fairly successful.

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[1] *Journal Hebdomadaire*, No. 97, and *Thèses de la Faculté*, 1832, No. 252.

[2] *Lancet*, May 1832, p. 198. Billings scoffs at the idea of the first sound being in any respects compound, or due to anything but valve closure. Vide *The First Principles of Medicine.* London, 1868. 6th edition, p. 40.

[3] *On the Sounds caused by the Circulation of the Blood*, by Arthur Leared, M.D., London, Churchill, 1861; and *Reply to Dr C. J. B. Williams' Remarks on the Mechanism of the Sounds of the Heart*, by Arthur Leared, M.D., London, 1876; and *Brit. Med. Jour.*, 2nd Dec. 1876. A short but comprehensive statement of the evolution of the various theories as to the causes of the heart's sounds will be found in Laennec by Forbes, *op. cit.*, p. 511; *Cyclopædia of Anatomy and Physiology*, vol. ii., article "Heart"; also in Longet's *Traité de physiologie*, Paris, 1860–61, tome ii. p. 153; and in Hayden's *Diseases of the Heart and Aorta*, Dublin, 1875, p. 94.

[4] Proof of this will be found in Hope's account of his experiments. Vide *Opera citata*, and the *Reports of the London and Dublin Committees* appointed to investigate the sound of the heart. *Dublin Journal of Medical Science*, Sept. 1835, *Medical Gazette*, Sept. 1835, and *Transactions of the British Association for the Advancement of Science*, vol. v. 1835, and vol. vi. 1837.

[5] *A Treatise on Diseases of the Heart and Great Vessels*, by J. Hope, M.D. London, 1832, p. 340, etc.

[6] *Op. cit.*, 3rd edition, 1839, p. 616, etc.

Constriction or obstruction at the mouth of the aorta was early recognised, as revealed by a systolic murmur, heard loudest above mid-sternum; and though this was at first associated with signs which did not belong to it, these were erelong eliminated, and this murmur stood alone as the acknowledged result and indication of obstruction at the aortic opening.[1] The difficulties which beset the diagnosis of lesions of obstruction from lesions causing regurgitation from the physical signs alone, as they were then understood, led about this time to more attention being paid to other concomitant signs and symptoms. The first fruit of this was the discovery by the late Sir Dominic Corrigan, who had by this time recanted his error as to the cardiac rhythm, of a jerking pulse and visible arterial pulsation as important signs of aortic regurgitation. Corrigan also recognised a systolic thrill and murmur in the ascending aorta and carotids as part of the concomitant symptoms of this lesion, and he also recognised the occasional occurrence of a double murmur in the ascending aorta, but this he considered was only present when "the deficiency of the valves is considerable."[2] Indeed, though Corrigan, Hope, and the other authors of that time were aware that a diastolic murmur accompanied regurgitation through the aortic valves, yet they put little trust in it as a diagnostic sign, because, as the late Professor Henderson said, "the simple occurrence of a murmur instead of a clear second sound at the base of the heart is no evidence of patency of the aortic valves, since it equally attends contraction of either of the auriculo-ventricular openings."[3] Indeed, Henderson was so strongly impressed with the importance of this difficulty, that he bestowed the greatest pains in ascertaining and in demonstrating a delay in the pulse as a sign of aortic regurgitation, a delay which always exists, and is sometimes so great that the pulse exactly alternates with the systole of the ventricles, and may even be synchronous with the ventricular systole following that which caused it.[4] Skoda of Vienna described a double murmur—*bruit de va et vient*—as frequently present in cases of aortic regurgitation, but stated that it is the diastolic portion alone that is distinctive of incompetence of the aortic valves. He pointed out that in mitral stenosis the prolonged diastolic murmur is accompanied by increased transverse percussion dulness of the heart, and by an accentuated or reduplicated second sound in the pulmonary artery;

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[1] Hope, *op. cit.*, 1st edition, 1832, p. 340, etc.

[2] *Edin. Med. and Surg. Jour.*, vol. xxxvii. 1832, p. 232.

[3] *Edin. Med. and Surg. Jour.*, vol. xlviii. 1837, p. 367. Hope himself seems to have outgrown this doctrine. Vide *op. cit.*, 3rd edition, 1839, p. 75.

[4] *Edin. Med. and Surg. Jour.*, vol. xlviii. 1837, p. 369.

while in aortic regurgitation the percussion dulness of the heart is increased longitudinally, and the left ventricle is generally so greatly hypertrophied as either to give a blow like a hammer to the listening ear, or to elevate the chest wall with a heaving motion.[1]

The diagnosis of aortic regurgitation was now perfect, but not complete. A diastolic murmur at or below the level of the aortic valves, accompanied by visible arterial pulsation and by a jerking pulse, always delayed, with a heart enlarged downwards and outwards, and beating with a slow heaving pulsation, are indubitable signs of aortic regurgitation, but they are not always present, especially in the early stages of the disease, and, to make the diagnosis complete, it was needful to be able to separate the diastolic murmur of incompetent semilunar valves from the murmur due to stenosis of the auriculo-ventricular openings, which could not be done by any observer of that day.[2]

We owe to Dr Elliotson the earliest published notice of a bellows murmur replacing the first sound due to regurgitation through the mitral valves, and in regard to it he says, "The opinion of the permanent patency of a cardiac opening from any cause, as a source of the bellows sound, I heard first from Dr James Johnson. Who originally suspected it I cannot say."[3] This idea once started, however, speedily received universal acceptance, and became, as it were, an axiom in medicine.[4] It was long, however, before the murmur which we now recognise as distinctive of obstruction at the mitral orifice was properly appreciated either as to its character or rhythm. Those acquainted with the literature bearing upon this subject—and there is no more interesting episode in the whole history of cardiac diagnosis—know well how narrowly even the earlier observers have apparently missed making the discovery; and how often later observers, guided by physiology, have ascribed a correct rhythm to a murmur which they seem, from their description, never to have heard; while others, misled by their prejudice, have assigned an incorrect rhythm to a murmur with which they must have been intimately acquainted, as appears from the accurate manner they have vocalized and described it. The literature connected with this murmur is too extensive to be quoted fully, and yet it is too interesting and important to be confined to mere references; it should be carefully read by every one who wishes to have clear ideas upon the subject. Previous to Hope, as we know, the differentiation of any murmur as connected with a special lesion was an impossibility, and yet the purring thrill which is so constant a concomitant of mitral stenosis very nearly put some of the earlier observers on the right track. Hope himself seems, if not to have altogether blundered, at least to have dogmatized in regard to this murmur in a quite remarkable manner. He says, "When the mitral valve is considerably contracted, a murmur (best heard in the same situation as the murmur from regurgitation, and distinguishable in the same way [by position of maximum intensity] from semilunar murmurs), attends the ventricular diastole and second sound. From the weakness, however, of the diastolic current out of the auricle, the murmur is always very feeble, soft, like the bellows sound, and usually on a rather lower key than a whispered *who*. I have found this murmur absent unless the contraction of the valve was considerable, for the blood had still sufficient room to pass with tranquillity; and I have also found it absent when the contraction was very *great*—when, for instance, the aperture admitted one finger only, or merely a quill. . . . On the whole this murmur is exceedingly rare, though Laennec and authors in general have supposed quite the contrary, from mistaking for it the murmur of aortic regurgitation."[1] Hope is here right enough as to the rarity of a diastolic murmur as a sign of mitral stenosis, his vocalization of this peculiar variety of this murmur seems wonderfully good for these early days, but he has not by any means either given or apparently comprehended the whole truth as to the murmur distinctive of mitral stenosis, and his other statements may be classed under the head of incorrect truths —erroneous dogmatism with a basis of truth. Gendrin is the man who seems to have first made use of the term presystolic, and he is pretty generally accredited by French authors with having discovered the murmur.[2] Fauvel, indeed, acknowledges having borrowed the expression from him, giving it, however, a totally different semeiotic signification, a statement which could hardly be true if Hayden is correct in saying that Gendrin by the term presystolic signifies the period "when the contraction of the auricles and rapid entrance of blood into ventricles take place."[1] Gendrin himself says, "A l'instant où le cœur va se contracter et passer à l'état de systole, il y a à la fin du grand repos du cœur un moment auquel peuvent se produire des phénomènes morbides, c'est la présystole; c'est en quelque sorte le temps des prodromes de la systole, la systole imminente;"[2] and if we turn to where he speaks of the physiological acts of the heart to discover what he means by the term systole, we find he includes under it the contraction of the auricles as well as of the ventricles; thus he says, "en faisant commencer l'action du cœur par la systole au moment où toutes ses cavités sont remplies de sang, on doit considérer la systole comme une contraction brusque qui commence à l'appendice auriculaire, se continue à l'oreillette et finit aux ventricules."[3] With Gendrin, therefore, the term presystole did not mean, as Hayden has said, the period of the contraction of the auricles, but a hypothetical period immediately preceding the commencement of that contraction. In regard to the rhythm of the murmur indicative of mitral stenosis, Gendrin calls it *prédiastolique,* and separates it from his presystole by the whole duration of the systole (of both auricles and ventricles) and of the perisystole.[4] His own words are: "Quand la colonne de sang en passant des oreillettes dans les ventricules rencontre des rugosités aux orifices auriculo-ventriculaires, on entend un bruit de frottement prédiastolique. Si les rugosités s'étendent jusqu'au bord libre des valvules, ce bruit se prolonge jusqu'à la percussion diastolique et se termine avec elle; si l'altération occupe exclusivement le bord libre des valvules, sans intéresser leur bord adhérent ou l'orifice auriculo-ventriculaire proprement dit, le bruit ne commence qu'avec la diastole et se termine avec elle, il est alors diastolique. Quand le bruit est prédiastolique, on peut penser qu'il existe un rétrécissement d'un des orifices auriculo-ventriculaires. On peut l'affirmer, s'il existe en même temps un dédoublement de bruit de percussion diastolique. Le sang emploie d'autant plus de temps pour traverser l'orifice auriculo-ventriculaire rétréci, et le bruit de frottement est d'autant plus prolongé, que le rétrécissement est plus considérable."[5] These statements are a sufficient warrant for stating that Gendrin's presystole is certainly not the presystole of Fauvel nor of our day; and that though it appears that he was acquainted with the presystolic murmur, yet his acquaintance with it was that of a fourth year's student,[1] and did not include a knowledge of its rhythm. To Fauvel, however, we owe the first clear, distinct announcement and clinical demonstration of a loud, rough murmur, running up to and terminating with the first sound, *un bruit de râpe intense, précédant le premier bruit, finissant avec lui*, as an indication of mitral stenosis, and to this murmur he gave the name of presystolic, because he recognised it as immediately preceding the ventricular systole, and as occurring at the moment of the auricular systole, and, therefore, due to the friction of the blood forced by that contraction through the constricted mitral opening.[2] And now for the first time physicians were provided with the means of differentiating the murmur of regurgitation through the aortic valves from that produced by obstruction to the flow through the mitral opening. M. Fauvel was fully alive to the importance of his observations from the diagnostic point of view, and though perfectly aware of their provisional character and need of confirmation, he probably exaggerated this importance by failing to recognise the occasionally diastolic character of the murmur of mitral stenosis.[3] Fauvel's views did not at first receive much acceptance generally, especially from his own countrymen; even so late as 1862 Duroziez scoffs at "this famous presystolic murmur of which every one speaks, which no one understands, which Hope never heard, and Bouillaud neglects and even denies."[4] Yet Duroziez himself vocalizes the murmur of mitral stenosis, heard at the base, as *vout-ta-ta*, and heard over the apex as *ffout-ta-ta-rou*, vocables which no one who knows anything of the matter at all could pronounce without at once recognising that he had before him a case presenting a presystolic murmur, reduplicated second, and a diastolic mitral murmur; and, indeed, while declaring the most important part of the murmur, distinctive of mitral stenosis, to be systolic,[5] Duroziez yet acknowledges that a primary, but, as he alleges, merely accessory and unimportant part is presystolic.[6] In France this murmur obtains more recognition now-a-days, but it was long of gaining its proper place.

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[1] *Abhandlung über Perkussion und Auskultation*, von Dr Joseph Skoda. Wien, 1844, 3rd auflage, ss. 222, 306, and 307. The first edition was published in 1839, and contained precisely similar statements.

[2] Nor even of a much later date, for even in 1854 M. le Dr Hérard says, in speaking of a diastolic murmur as indication of mitral stenosis, "Nous n'en sommes pas moins les premiers à reconnaître que ces observations sont très-rares, et que le plus ordinairement un bruit de souffle au second temps dénote l'existence d'une insuffisance aortique."—*Archives Générales de médecine*, v^{e}. série, tome iii. p. 177.

[3] *Recent Improvements in the Art of Distinguishing the Various Diseases of the Heart*, by John Elliotson, M.D. London, 1830. Pp. 19, 20. Elliotson found that when the regurgitation was very free the murmur ceased.

[4] *Vide* Hope, *op. cit.*, 3rd ed., Introduction, p. 25, and p. 387. "C'était une croyance généralement reçue, avant les recherches de M. Beau, qu'un bruit de souffle au premier temps et à la pointe du cœur indique toujours, et nécessairement, l'insuffisance de la valvule mitrale."—Herard, *Archives Générales de médecine*, 1853, v^{e}. série, tome ii. p. 544.

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[1] Hope, *op. cit.*, 3rd ed., p. 387.

[2] Thus Herard says, in regard to mitral stenosis revealed by a murmur just preceding the systole, "Le fait, entrevue par MM. Barth et Roger, signalé par M. Gendrin, a été cliniquement démontré par M. Fauvel.—*Archives Générales de médecine*, v^e. série, tome ii. p. 549, 1853; and Maurice Raynaud says, "*La dénomination* de souffle *présystolique*, créée par Gendrin."—*Nouveau Dictionnaire de médecine et de chirurgie pratique*, 1868, tome viii^e., article "Cœur," p. 615. Barth and Roger knew even less about the presystolic murmur than Gendrin, and how little he knew may be gathered from the text.

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[1] Hayden, *op. cit.*, p. 81.

[2] *Leçons sur les maladies du cœur et des grosses artères*, par M. A. N. Gendrin. Paris, 1841–42. Tome i. p. 31.

[3] *Op. cit.*, p. 29.

[4] Gendrin divided for diagnostic purposes each cardiac pulsation into six periods—*systole*, including both the auricular and ventricular contraction; *perisystole* and *prediastole*, forming the first and second halves of the short pause; *diastole*, the moment of relaxation of the heart, including the second sound; *peridiastole* and *presystole*, the first and second portions of the long pause, terminating, however, before the commencement of the auricular contraction which he included in the systole.

[5] Gendrin, *op. cit.*, tome i. p. 110.

Friedreich, in 1861, seems to have been the earliest German physician to adopt the view that "in stenosis of the left auriculo-ventricular orifice the murmur is sometimes only audible during the time of the active contraction of the auricle."[1] And though Von Dusch, in 1868, speaks of the presystolic murmur as a well-known indication of mitral stenosis, he puts the diastolic murmur beside it as of equal frequency and equal importance,[2] and this, together with the confused way in which their text-books yet speak of this murmur, shows that what Skoda never recognised has not yet been fully comprehended by the Germans.

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[1] Who invariably recognises the murmur as terminated by the second sound.

[2] "Mémoire sur les signes stethoscopiques du rétrécissement de l'orifice auriculo-ventriculaire gauche du cœur," par A. Fauvel, *Archives Générales de médecine*, 4th série, tome i. p. 1, 1843.

[3] *Loc. cit.*, p. 4.

[4] *Archives Générales de médecine*, ve. série, tome xx. p. 390, 1862.

[5] In this he is no worse than some more recent authors. *Vide* Dr A. W. Barclay's remarks on Presystolic Cardiac Murmur, *Lancet*, 1872, vol. i. p. 283. etc.

[6] Duroziez, *loc. cit.*, p. 400.

In our own country, Walshe seems to have been the first publicly to recognise the true rhythm of the murmur indicative of mitral stenosis, as in the first edition of his work, published so long ago as 1851, he speaks of this as rather "post diastolic or presystolic than precisely coincident with the diastole,"[3] and he has consistently maintained this through all subsequent editions. But Walshe seems rather to have had a theoretical idea of what the rhythm of this murmur ought to be than a practical acquaintance with the murmur itself; his view seems more like a simple induction from his physiological theory of the heart's action than a truth confirmed by observation, precisely as Fauvel has said of the theory of the diastolic character of this murmur.[4] Proof of this is to be found in his statement that he has never observed diastolic thrill at the left apex, and that consequently, in his experience, mitral constriction has never led to its production, hence he has argued against Skoda's absolutely truthful statement, that "purring tremor 'especially' attends mitral constriction," and is consequently frequently diastolic in rhythm.[5] Also in the fact that he has opposed Skoda's equally correct observation as to accentuation of the pulmonary second being a sign of mitral stenosis, on the plea of the "infrequency of the direct mitral murmur, and of its frequent accompaniment by regurgitant mitral disease." And, lastly, in his observation, "I have never heard this murmur of great intensity."[6] Similar statements are made in all the subsequent editions of his work, and they make it pretty evident that he has had no practical knowledge of the true presystolic murmur, while his statements as to its infrequency, little intensity, low pitch, and absence of thrill, seem almost to justify the assumption that what he has heard and written about was the soft diastolic murmur occasionally heard in mitral stenosis; and this assumption would completely explain Walshe's other statements, that though "sometimes prolonged, this murmur is rarely loud enough to cover the second sound completely, even at the left apex;" and that though he has spoken of it as diastolic in rhythm, "in point of fact it is rather post diastolic or presystolic, than *precisely* coincident with the diastolic."[1]

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[1] Virchow's *Handbuch der Speciellen Pathologie und Therapie*, Bd. v., p. 366, 1861.

[2] *Lehrbuch der Herzkrankheiten.* Leipzig, 1868. P. 214.

[3] *A Practical Treatise on the Diseases of the Lungs and Heart*, by Walter Hayle Walshe, M.D. London, 1851. P. 226.

[4] *Loc. cit.*, p. 3.

[5] *Op. cit.*, pp. 176 and 502.

[6] *Op. cit.*, p. 226.

But however that may be, there is no doubt that it is to the lucid descriptions and instructive diagrams of Professor Gairdner of Glasgow, published in 1861, that British physicians owe their acquaintance with the presystolic murmur, to which he also gave the new name of auricular-systolic, by this happy combination expressing at once the mechanism and the rhythm of the murmur.[2] There can be little doubt that this most expressive and distinctive epithet tended to fix in the minds of the observers the points they were to look for, and hastened the recognition of this murmur in this country, just as it seems to have been delayed in France by the division of the cardiac cycle into *premier temps*, including the systole of both auricles and ventricles, and *second temps*, including their diastole, and by the use by Fauvel of the inconsequential term presystolic, which had already been employed by Gendrin in a more easily comprehensible sense. Dr Gairdner has made no claim to originality in regard to the discovery of this murmur; upon the medical public of this country, however, his admirable lecture had all the effect of a discovery, and it succeeded in making plain and generally acceptable the doctrine which Fauvel had nearly twenty years before preached to his own countrymen in vain. Up to this time Fauvel's views appear to have been quite unknown in Britain. Markham, indeed, narrates several cases in which a mitral murmur preceded the heart's impulse and was accompanied by a purring thrill, but he narrates them to prove the existence of a diastolic mitral murmur,[3] and so far from recognising its true mechanism, he hazards the speculation that it is due to the "action of the respiratory forces."[4] Walshe, as we have seen, seems to have fallen accidentally upon the true rhythm, though it seems more than doubtful if he ever heard the true murmur. And I feel sure that those who, like myself, have been personally cognizant with the progress of these events, or who will take the trouble to make themselves acquainted with their recorded history, will agree with me in thinking that both observers have been entirely original, and that the profession owes, in relation to the diagnosis of the direct mitral murmur, even more to the admirable exposition of Gairdner than it does to the masterly analysis of Fauvel. From this time onward, in this part of Britain at least, the presystolic or auricular-systolic murmur has been generally accepted as a certain proof of the existence of stenosis of the mitral opening. This view was, however, more slowly adopted in the south. Here and there a solitary case was recorded in the journals,[1] but it was not till 1867 that such authorities as Dr Peacock[2] and Dr Sutton[3] gave in their adhesion to Dr Gairdner's view, acknowledging that the presystolic murmur was not so rare as they had supposed, though they still regarded it as difficult of detection, a statement which seems incomprehensible to those thoroughly acquainted with this murmur; and it was not till Hilton Fagge published, in 1871, his paper treating of the direct mitral murmur in a most comprehensive manner, both from a historical and from a clinical point of view,[4] that the auricular-systolic murmur may be said to have been accepted by the profession generally, both north and south of the Tweed, as a special murmur perfectly distinctive of mitral stenosis.

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[1] *Op. cit.*, p. 226.

[2] *Edinburgh Medical Journal*, Nov. 1861, p. 438. *Vide* also *Clinical Medicine*, by W. T. Gairdner. Edinburgh, 1862. P. 560 and p. 597, etc.

[3] "On the Diastolic Mitral Murmur," by W. O. Markham, M.D., *Monthly Journal of Medical Science*, January 1854, p. 26.

[4] *Loc. cit.*, p. 30.

So far as I know, the late Dr Flint is, or rather was, the only physician who of late years has publicly opposed this view, and asserted that he had heard an auricular-systolic murmur in cases where, after death, the mitral valve was found healthy and the aortic valves diseased. I suppose no one has any doubt that the source of this error was an incorrect appreciation of the rhythm of this murmur, and an imperfect acquaintance with its character.[5]

Having thus traced the evolution of the diagnosis of lesions of the cardiac valves by means of their distinctive murmurs down to the present day, I have still to recur to those cases in which loud murmurs are heard in the absence of any organic lesion, or with the presence at most of some degree of dilatation and hypertrophy with healthy valves. It was the entire absence of murmur in so many hearts, when lesions quite sufficient to produce it existed, and the presence of a murmur in so many cases when there was apparently no lesion to account for it, that led Laennec to regard the bellows murmur as a purely nervous phenomenon. The reaction against this theory caused all Laennec's immediate successors to consider organic obstruction as the cause of all the varieties of bellows murmur. Hope was the first to recur to Laennec's earlier view, and to accept hypertrophy and dilatation without valvular lesion as one of the causes of bellows murmur. In the earlier edition of his work, Hope represented this murmur as of frequent occurrence at the aortic orifice in such cases,[1] but in his third edition he says that he found this murmur to be almost exclusively restricted to those cases in which there was marked anæmia.[2] Evidently, looking on it as a functional murmur from the then point of view of such murmurs, Walshe goes a step beyond this, and describes a systolic apex murmur as an occasional though rare result of dilatation of the ventricles and of the auriculo-ventricular opening.[3] Stokes very clearly approximates the modern view, for he says, "when dilatation of the cavities is carried beyond a certain point, valvular insufficiency may result, and then a murmur is produced, which, though having its origin in the valvular orifices, yet does not proceed from valvular disease."[4] This condition he regarded as one of extreme rarity, and as due to weakening of the muscular walls, and not to enlargement of the orifices. Dr M'Dowell, of Dublin, has also published a number of cases of dilatation of the heart, in which a systolic apex murmur, unaccompanied by any valvular deformity, was a prominent symptom. In these papers, however, he recurs to Walshe's view, and describes the murmur as due to dilatation of the auriculo-ventricular openings.[5] The next to take up this question was Professor Gairdner of Glasgow in a most important, though unfinished paper, in which he states it to be his conviction that "a murmur caused by auriculo-ventricular regurgitation (mitral or tricuspid) is at least as frequent an indication of considerable dilatation of the corresponding ventricle as any other of its physical signs; and further, that even in cases where such a murmur does not occur, or is not observed, auriculo-ventricular regurgitation is frequently present, and plays a most important part among the sequelæ of dilatation."[6] Dr Gairdner thus distinctly states that instead of regurgitation being an exceptional occurrence in cases of ventricular dilatation, without primary valvular disease, it is in these circumstances the normal state, and is very frequently associated with a systolic murmur. Dr Gairdner not only based this view upon a considerable clinical and pathological experience, but supported it by clinical histories of several cases with post-mortem measurements of the hearts and their orifices.[7] To Gairdner, therefore, we owe this unquestionably clear and distinct advance in medical science, which opened the way for the accurate diagnosis of all that numerous and important class of cases which may be comprehensively included under the term Heart-strain.[8] Arising from various causes, heart-strain comprehends probably the greater number of cases of heart disease, which, fortunately for mankind, are largely curable. A few years later Dr Bristowe published a very excellent paper on the same subject, taking precisely the same view as Dr Gairdner, and supporting it by a series of cases. Bristowe, looking on a tricuspid murmur as so extremely infrequent as to be practically non-existent,[1] states that an apex murmur may be regarded as positive proof of regurgitation through the mitral valve, and that when this occurs independent of valvular lesions, it is due to muscular debility, and relative shortening or displacement of the *musculi papillares* and *chordæ tendineæ*,[2] precisely as Mr King has shown occasionally occurs as a normal process in the right ventricle.[3]

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[1] By Gull and Wilks, *Medical Times and Gazette*, 1865, vol. i. p. 198; by Rees and Gull, *Medical Times and Gazette*, 1866, vol. i. p. 90; and by Hayden, *Medical Press and Circular*, 1866, vol. ii. p. 5, etc.

[2] *British and Foreign Medico-Chirurgical Review*, vol. xl., October 1867, p. 489.

[3] *London Hospital Reports*, vol. iv. 1867–68, p. 297.

[4] *Guy's Hospital Reports*, vol. xvi. p. 326, 1871.

[5] *Lectures on Diseases of the Heart*, Philadelphia, 1870, p. 207; and *International Journal of Medical Science*, 1886. In the first edition of his work, 1859, Flint designates this murmur as diastolic, adding that it is more strictly presystolic, and that it is soft in character, an opinion he afterwards acknowledged to be incorrect, but to the last he thought it well described as blubbering.

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[1] Hope, *op. cit.*, 1st edition, p. 62.

[2] Hope, *op. cit.*, third edition, p. 94.

[3] Walshe, *op. cit.*, third edition, p. 323.

[4] *The Diseases of the Heart and the Aorta*, by William Stokes. Dublin, 1854. P. 271.

[5] *Dublin Quarterly Journal*, vol. xiv. p. 352, 1852, vol. xvi. p. 76, 1853, and vol. xvii. p. 90, 1854.

[6] *Edinburgh Medical Journal*, July 1856, p 59.

[7] *Edinburgh Medical Journal*, *loc. cit.*, p. 55.

[8] *Vide* "On the Irritable Heart," by J. M. Da Costa, *American Journal of*

This practically concludes the evolution of cardiac diagnosis, so far as the murmurs are concerned, and brings to a close one of the most interesting chapters in its history. I have to apologize for the manner in which my share of the work has been done. The inquiry is too important to be dismissed so perfunctorily, yet even in this concise form it may help to show how rapidly the diagnosis of cardiac disease has progressed, and that this progress has been gained solely by following the example of Harvey in studying and searching out the secrets of Nature by careful inquiry and experiment. The earlier inquirers hoped much from improved methods of diagnosis, but inability to recognise any but advanced disease and serious lesions for long rendered that expectation vain. Now, we find many cases of heart disease which are curable, and but few which cannot be greatly relieved; we are reaping the reward of the patient toil of our forefathers, and mankind, through us, are daily benefitted by the results that have sprung from investigations that were long apparently fruitless.

Medical Science, January 1871, p. 1; "On the Effect of Overwork and Strain upon the Heart and Great Bloodvessels," by T. Clifford Allbutt, *St George's Hospital Reports*, vol. v. 1870, p. 23; Zur Lehre der Ueberanstrengung des Herz, von J. Seitz, *Deutsches Archiv f. Klinische Medizin.*, Bd. xi. p. 485, 1873, and Bd. xii. 1874; also, by Seitz, a Collection of Monographs on the same subject, *Die Ueberanstrengung des Herz*, Berlin, 1875; and especially *Die Herz Krankheiten in Folge von Ueberanstrengung*, by E. Leyden, Berlin, 1886.

[1] I need scarcely say that this view is no longer held, and that we have ample means of differentiating tricuspid from mitral regurgitation.

[2] *British and Foreign Medico-Chirurgical Review*, vol. xxviii., July 1861, p. 215.

[3] "On the Safety-Valve Function of the Right Ventricle of the Heart," by Mr Wilkins King, *Guy's Hospital Reports*, p. 104, 1837.

II.—SECTIONAL ANATOMY OF LABOUR.

1. BEFORE LABOUR, AND 2. FIRST STAGE.

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(*Read before the Edinburgh Obstetrical Society, 10th November* 1886 *and* 12*th January* 1887.)

(*Continued from page* 995.)

FIRST STAGE (Sections by *Barbour* and *Schroeder*).

III. My Section of a *VI.-para who died in the First Stage of Labour from acute enteritis.*

The *clinical facts* are as follows.—Patient was a vi.-para, expecting confinement during a few days; had been indulging excessively in alcohol for a week, with exposure to cold, which brought on acute enteritis. No fœtal movements had been felt for three days; palpation showed uterus to extend to near the xiphoid cartilage, and the fœtus with the head in the pelvis and the back to the right side. No fœtal movements could be felt. Auscultation showed no fœtal heart. On vaginal examination, the head of the child was in the pelvis and lying transversely—cervix admitting one finger. During the twelve hours before death and subsequent to examination she had occasional pains, and the os dilated to admit three fingers. The occiput was to the right, and both fontanelles were on the same level. As the child was dead, there was no indication for artificial delivery.

The whole cadaver could not be obtained; but within twelve hours after death the pelvis and lower portion of the abdomen, up to half an inch above the umbilicus anteriorly and the third lumbar vertebra posteriorly, were removed, and placed in a freezing mixture for three days. The removal of the intestines from round the uterus, and the absence of upper lumbar vertebræ and of abdominal wall above the umbilicus prevent us from drawing any conclusions as to the relations of the fundus uteri. The height of the fundus, however, corresponds with that given by Schultze and confirmed by Waldeyer, viz., about the upper border of the second lumbar vertebra. The cervix, also, is about the level of the ischial spines, so that the opening into the abdominal cavity in its upper part has not made the uterus sink much downwards.

As in the other sections published, the body had been frozen in the horizontal posture; I froze this one in the erect posture, which fact must be kept in mind in examining the sections. Dr Tatham Thomson has reproduced with beautiful accuracy the natural colour

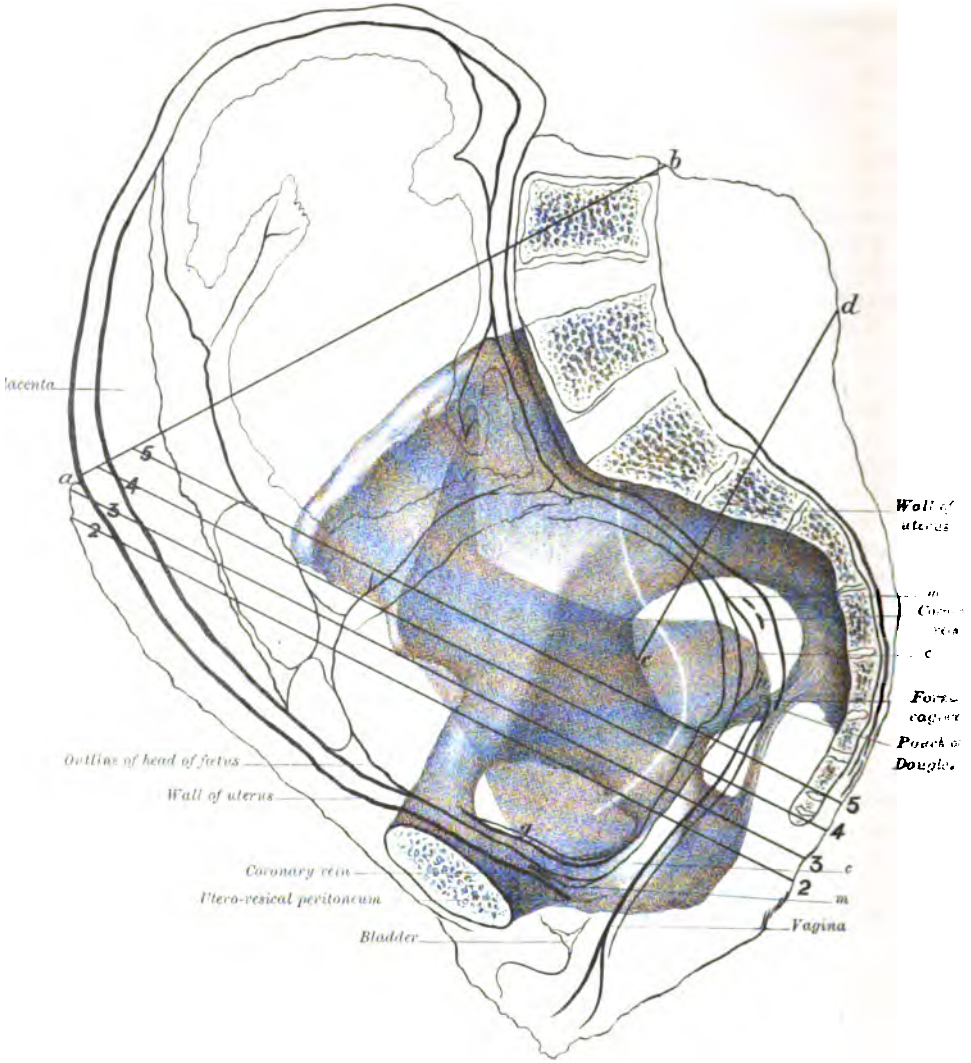

DIAGRAM TO SHOW THE POSITION OF THE SECTIONS (referred to in the text)
of a VI.-*para, who died of enteritis during the First Stage of Labour.*

The surface outlines are taken from the vertical mesial section, and the chief structures are lettered. The cervix being divided to the left of its canal, its lumen is not exposed. The characteristic tissue of the cervix stops at *c c*—the wall between these points and the coronary vein being the lower segment over which the membranes are separated up to *m*.

The lines a b, c d, indicate the direction of the transverse sections; and 2, 3, 4, 5, the coronal ones. By piecing these sections together we can plot out a large triangular area (shaded and lettered f, g, h) representing the amount of uterus not covered by peritoneum, but surrounded by cellular tissue only; the course of the ureter is indicated by the white line.

A. H. F. B.

of the frozen sections in the plates which I now hand round with the sections.[1]

After a vertical mesial section had been drawn and coloured, I made a transverse one passing through the fourth lumbar vertebra, in order to see the relation of the uterus to the spinal column and the ureters. A series of five coronal sections was made to bring out the side relations of the uterus and cervix, especially the peritoneum, connective tissue, and ureters. A second transverse section was made, behind the last coronal one, through the posterior part of the pelvis, passing through the second sacral vertebra, and parallel to the plane of the brim. When the tissues were thawed, portions were cut out and hardened for microscopic examination.

In summing up the salient points in these sections, we group them round the same heads as before, taking up, with the connective tissue, *the ureters.*

1. *Peritoneum, Connective Tissue, and Ureters.*—The *peritoneum* dips down in front of the uterus to the level of the lower margin of the symphysis. Following it backwards as the anterior layer of the broad ligament, we find it at the level of the lower margin of the pubis, then at the level of the brim of the pelvis, then rising higher, till, in the middle line transversely, it is 1·2 in. (3 cm.) above it. In the portion of the pelvis behind the fifth coronal section we find both layers of the broad ligaments running upwards and backwards along the iliac fossæ to end in front of the posterior superior iliac spine. The posterior layer descends into the pelvis on the right side, about one-fourth of an inch behind Section V.; and on the left about half an inch further back. It descends almost vertically downwards so as to appear in the second transverse section, where it forms the deep part of the pouch of Douglas, corresponding in extent to rather more than the breadth of the sacrum and coming farther forward on the right side. The deepest part of the pouch of Douglas is in the middle line opposite the central sacral vertebra.

Following the *cellular tissue* in the same way, we find it sparingly in amount between the uterus and the bladder, then increasing in amount in the same region, and forming a well-marked cellular deposit between bladder, uterus, and levator ani. This deposit can be traced passing upwards between the uterus and the brim of the pelvis in a well-defined band, thus being continuous with cellular tissue on the iliacus muscle and outside of the utero-vesical peritoneum. Section V. and the portions lying behind it show us that the cellular tissue of the broad ligaments is enormously increased, and runs upwards and backwards along the iliac fossæ. We find the cellular tissue again very abundant round the rectum, and on either side of the pouch of Douglas forming the substance of the utero-sacral ligaments. Finally, we note how sparing it is round the end of the pouch of Douglas.

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[1] The sections were demonstrated to the Society, and the whole series will shortly be published in an Atlas on *The Sectional Anatomy of Labour*: W. & A. K. Johnston, Edinburgh.

The facts, then, which these sections show us with regard to the peritoneum and cellular tissue may be briefly summarized as follows:—While the peritoneum dips down anteriorly and posteriorly in the same degree that it does in the unimpregnated condition, it *is lifted up towards the front at the sides* of the uterus.

The anterior layer of the broad ligament is above the brim of the pelvis in the Coronal Sections II., III., IV., V. In I. we find it at the level of the brim. The vertical mesial section shows that in front of I. it comes as low down in the middle line as its lower margin of the symphysis; the low position of the fold here must be partly due to the exaggerated bulging of the pelvic floor from the freezing of the body in the erect posture.

The cellular tissue is enormously increased in amount; in front of the plane of Section V., we find (with the exception of the deep dip of the peritoneum immediately in front of the uterus) only cellular tissue packing in the cervix below the brim of the pelvis.

The fact that such a considerable portion of the uterus is uncovered by peritoneum to its sides and front is of importance with regard to Thomas's operation; it also gives an explanation of cases of so-called incomplete rupture, in which, while the tear has gone through the muscular wall, the peritoneal cavity has not been opened into. Finally, it has a bearing on pelvic inflammation during pregnancy.

Ureters.—We find the *ureters* first lying in the cellular tissue well back on either side of the spinal column. From this they can be followed in the portions of the pelvis behind Coronal Section V. crossing the common iliac artery just above the brim of the pelvis —the right one 1·4 inch (3½ cm.), and the left 1¾ inches from the middle line—then running down the iliac fossæ immediately under the peritoneum so as to appear on the ileum anterior to the sacro-iliac joint (2½ cm. anterior on the left side, 3 cm. on the right). Here they are separated from the iliac bones by from ·8 to 1 cm. of cellular tissue (the tissue of the utero-sacral ligaments and large veins). Next, in Coronal Section V., we find them internal to the ischium just in front of the lower part of the great sacro-sciatic notch; and in Coronal Sections IV. to I. we can trace the course of the *right ureter* throughout; in Coronal Section IV., lying internal to the ischium, 1 cm. above the level of its spine and the same distance internal to its bony surface, the space between being filled up by fatty cellular tissue; then, in Coronal Section III., on a level with the lower border of the acetabulum and 1 inch (2½ cm.) internal to the ischium, the space between being filled up by the obturator internus and fatty tissue; then, in Coronal Section II., 1 inch (2½ cm.) internal to the ischium, from which it is separated by some cellular tissue, levator ani, and obturator internus, and at about the same level as in the previous section; finally, in Coronal Section I., we see it entering the bladder, the walls of which have been drawn apart to show its opening. We have described the course in terms of the bony pelvis, as one object of our tracing the course was to determine at what point the ureter is liable to compression.

Can the uterus press on the ureters so as to produce disturbance of the kidneys and albuminuria?

In the lumbar region and at the brim of the pelvis, the projecting spinal column and promontory of the sacrum keep the uterus off from the ureters, which lie well back on either side; in the upper portion of the pelvis, where they lie internal to the sciatic notch, they cannot be compressed between the uterus and bone; again, where they lie on the obturator internus, they are so far removed from bone that they cannot be compressed there. The only place where they are liable to compression is on the ischium just above its spine; even here they have a sufficient amount of cellular tissue round them to protect them from compression unless by a firm body, say the fœtal head. What these sections show, in fact, amounts to this,—*that there is only one point (on the ischium) where the ureters may be compressed, and that the chances of their compression are small.* We must therefore look elsewhere than in the mechanical theory for the whole explanation of albuminuria; and I would merely refer in passing to the case I brought recently before the Society, which pointed to another cause. The fœtus died *in utero* at the sixth month. As long as it lived, there was albumen; when it died, the albumen disappeared, although there was an interval of three weeks before its expulsion—that is to say, before there was any change in the mechanical conditions. Here we had *albuminuria due to some condition of the mother dependent on the life of the fœtus, and not on the pressure of the uterus.*

2. *Uterus: its Shape, Walls, and Vessels.*—It is interesting to note that the circumference of the uterine cavity in the vertical section (28 inches) is almost the same as the circumference in the horizontal section (24·2 inches); while, if we complete the segment in Coronal Section V., we have a circumference of about 26 inches. These measurements give an area of the inner surface of about 215 square inches. The uterus lies moulded on the spinal column. The horizontal section confirms Lah's description of the uterus as in a state of relaxation, and explains how the uterus during a contraction comes forward against the abdominal wall. The measurements given above show also that during contraction, so long as the contents of the uterus are fluid, it will assume an approximately spherical form. In judging of the plasticity of the uterus as brought out in frozen sections, we must make full allowance for the loss of tone in the walls post-mortem and the fact that expansion during freezing must exaggerate the former moulding of the

walls upon the surrounding parts. For example, if we were freezing water in an india-rubber bag enclosed in a wicker-work framework, we should find that the expansion in freezing would force the india-rubber (which corresponds to the wall of the uterus) into every interstice of the wicker-work. It is, therefore, riding the hobby of the "Plasticity of the Uterus" a little too hard when Waldeyer draws attention to the fact that in his section the posterior wall of the uterus is moulded upon the intervertebral discs. This plasticity of the uterus, however, is a very important fact to remember in abdominal palpation. We know of no abdominal tumour which may be more difficult to outline than the pregnant uterus; and we may account for this by the dimpling of the plastic uterus under the fingers.

In the vertical mesial section the uterine walls appear of almost uniform thickness from fundus down to the level of the promontory of the sacrum, with the exception of a slight increase at the placental site. In the horizontal section they appear thinner at the side—possibly an accidental circumstance, due to the fact that in the preparation the uterus had not the support of the side walls of the abdomen. Below this level both walls become thinner—the anterior by one-half (from 5 mm. above the brim to 2½ mm. below it), the posterior to a slightly less degree (from 5 mm. to 3 mm.). This thinning is even more marked in the side walls (7 mm. to 2 or 3 mm.). Below this very thin portion the wall becomes thick again in what we shall see to be the cervix.

At first thoughts, this thinning might be ascribed to *post-mortem changes* from greater pressure on the lower segment of the uterine wall by its contents, as the cadaver was frozen in the erect posture; exactly as in a pitcher of water, the pressure is greatest over the bottom. It did not, however, diminish at all after thawing and removal of what was above; nor does the microscopic examination of the walls show that the tissue was more compressed here. Further, if this thinness in the lower segment were due to the fact that the body was frozen in the erect posture, we should expect a corresponding thinning in the posterior wall in both Braune's and Waldeyer's sections, which would in them correspond to the bottom of the pitcher, as the cadaver in each case was frozen in the dorsal posture. All of these facts show that, making full allowance for gravitation acting on post-mortem tissues, we do not account for the thinning. It must have been there during life: either (1) produced during pregnancy as the result of unequal growth of the walls of the uterus, or (2) produced during labour by the contractions of the first stage.

In speaking of the Lower Uterine Segment, we noted that it was marked out by its being thinner than the rest of the uterus. In our section, this thinner portion of the wall extends, at least at the sides of the uterus, further than in the uteri which I have examined at the end of pregnancy. We are not justified in reasoning from one specimen; but if the condition in our sections be borne out by others made in the first stage, it follows that, *as the result of uterine contractions,* altogether independent of a pathological degree of resistance, we have the uterine wall differentiating itself into two portions—an upper active one which thickens, and a lower passive one which thins. If this be so, the dilatation of the cervix can only to a very slight degree be due to stretching through traction on its ring by the contracting uterine walls, but is almost entirely due to dilatation through expansion of the ring by the bag of membranes or presenting part.

As to veins in the uterine wall, these are especially numerous at the placental site. There are few in the lower segment of the uterus; in fact, the only veins of any size are two,—a sinus which has been drawn attention to by Braune and others as marking the os internum, and termed the "Kranzvene"—the circular or coronary vein; and another large sinus which loops down from about opposite to one utero-sacral ligament to opposite the other. The former of these is very large in the middle line anteriorly, measuring 1 cm. in the vertical mesial section and 1·7 cm. immediately to the left of it. We have followed it with a probe from the posterior wall forwards on both sides to coronal section, and traced it through the succeeding sections on the right side. This circular vein has been noted before in vertical mesial sections, but its course at the side of the uterus has not before been followed. From the great size of this circular vein we can well suppose that its rupture during labour would cause serious hæmorrhage, and we can thus explain cases of bad bleeding with the body of the uterus contracted. The other large vein in the posterior wall (which forms a loop downwards from opposite the utero-sacral ligaments) has not been referred to by others. We draw attention to it here, as it might possibly be mistaken for the circular vein.

3. *Cervix.*—The cervix lies to the right of the middle line. The level of the os externum cannot be exactly determined on account of the folding of the lips; but it may be said to be rather lower than the ischial spines, and to be about half an inch behind them. The distance between the lips appears in Coronal Section V. 1·2 cm., or rather less than half an inch. This gives no idea of the dilatation of the cervix during life, as it easily admitted three fingers (a breadth of 8 cm.).

In determining the position of the os internum, the following have been taken as guides:—(1), The utero-vesical fold of the peritoneum; (2), the circular vein; (3), the arbor vitæ of the cervix; and (4), the texture of its wall. In speaking of the lower uterine segment, we have seen that the first two guides are by themselves unreliable, and may be misleading. The utero-vesical fold of the peritoneum and the circular vein lie at the same level in front; the arbor vitæ is not seen there; we therefore place the os internum ·93 in. below that level anteriorly (see Plate), namely, at the point where the laminated uterine wall passes into the felted tissue of the cervix. The change in the character of the muscular wall at this point is quite marked. Posteriorly the arbor vitæ comes not quite up to the circular vein, so that we place also the os internum ·15 in. below that level.

4. *Placenta and Membranes.*—The *placenta* is situated in the anterior wall, rather more to the left than to the right of the middle line. In this case the area of attachment may be regarded as approximately circular with an average diameter of 7 inches, giving an area of 38½ square inches. We gave the area of the internal surface of the uterus as 215 square inches. Deducting from this 11 square inches for dilated cervix, we get 204 square inches as the area of the uterine walls. We may say, therefore, that rather less than one-fifth of the area is lined by placenta, and rather more than four-fifths by membranes.

The *membranes* line the uterine cavity, to which they are intimately adherent up to a point ·7 in. above the limit of the cervix anteriorly, and ·5 in. above the same level posteriorly (see Plate.) At the sides they are adherent up to the circular sinus on the right side, and to a point 1 inch above it on the left. They form over the os internum a bag stretching across the dilated portion of the cervix. We see that they are still adherent over the whole of the thin portion on the right side, and over the greater portion on the left; so that, clearly, stretching and thinning of the lower segment of the uterus does not necessarily imply separation of the membranes.

5. *Fœtus.*—The head of the fœtus lies transversely, with a very slight Naegele obliquity. The transverse section shows us both fontanelles on a level, so that this head would be described as partially extended; but the chin of the child is still in contact with the sternum. This section shows us, therefore, that we *may have a certain amount of so-called "extension" without the head's being really extended.* In speaking of the movements of the head, whatever terminology may be used with a skull and pelvis for teaching purposes, it will be best in clinical description to base our terminology on what is recognised by the hand per vaginam. Thus "extension" should mean "a dipping of the anterior fontanelle," and take no account of the relation of the chin to the sternum. The same effect would be produced by a rotation of the whole child round its transverse axis.

6. *Structures in the Pelvic Floor.*—The *bladder* is unusually low in the pelvis, its upper half lying opposite the lower half of the symphysis, while its lower half is below the plane of the outlet. This low position is due to two facts,—the patient had a lax pelvic

floor with a tendency to bulging in the anterior vaginal wall, and the body was frozen in the erect posture.

It is empty, and has the Y shape antero-posteriorly—the limbs measuring together 1·6 inch (4 cm.); transversely it is more expanded, measuring 2·1 inches (5·3 cm.). The empty organ has, therefore, its greatest dimension from side to side. Below, it is closely incorporated with the anterior vaginal wall; above, it is separated from the uterus by a thin layer of fatty tissue, which expands at the sides into a triangular deposit, filling in the space between bladder, uterus, and levator ani.

The *vagina* passes backwards, parallel to the plane of the brim, and diverging to the right of the middle line. It is rather longer than in the non-pregnant condition (3½ inches instead of 3). Transversely, at the level of the cervix, it measures 1·7 inch (4·4 cm.). The lateral fornices are obliterated by the folding of the lips and compression from the erect posture. Its walls are not much hypertrophied, and the thickness of tissue between the finger in the anterior fornix and the fœtal head is only ¼ inch (6 mm.), of which one-half may be set down as vaginal wall.

The *rectum*, commencing mesially at the anus, passes to the right and then appears to the left of the middle line.

IV. *Schroeder's section of a IV.-para who died during the First Stage from Albuminuria, with Heart and Lung Complication.*

In this case labour was rather more advanced than in our own, the os being dilated to the size of the palm of the hand. The fœtus was dead, so that the question of artificial delivery did not come up. The child was lying with the head transverse, and the occiput to the left. The pelvis was roomy (conjugate 4·9 inches), and the child's head lay low in it, just as in our case, the lowest part of its head almost touching the line joining lower edge of symphysis and tip of coccyx.[1]

The peritoneum does not come down so low anteriorly as in our case (junction of middle and lower third of symphysis). As the section is not mesial posteriorly, we can say nothing as to the depth of the pouch of Douglas.

The uterus, which reaches to the cartilage between the third and fourth lumbar vertebræ, bulges to an unusual extent beyond the pubis, as it does also in Braune's section of pregnancy. This is probably a post-mortem change, and the shape of the child determines that of the uterus. The child, both in Schroeder's case and ours, was dead before labour began, and the limp condition may explain how the head in each case is bent down on one shoulder, —in our case on the shoulder that lay posteriorly, hence the trunk of the child and the body of the uterus is applied to the spinal column; in Schroeder's case it was bent on the anterior shoulder, and hence the trunk of the child and part of the fundus in relation to it are almost at right angles to the mother's spine, and bulge above the pubis.

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[1] Tip of coccyx marked erroneously in Schroeder's diagram at level of posterior fornix, whereas, according to hismeasurements, it should be 1½ cm. higher up. This makes the line joining it and lower edge of symphysis cut the lowest part of child's head, not that of the membranes, as Schroeder says.

The thin portion of the lower segment of the uterine walls does not extend so far up as in our case, and passes more abruptly into the thick portion—the wall becoming, he says, suddenly four times as thick (instead of twice, as in ours); although in the section the increase does not appear greater than three times. The rest of the walls shows an almost uniform thickness except a slight increase in the placental site, as in our case.

No large veins are described at the os internum, but the veins are especially numerous where the thinner wall passes into the thick (which he calls the "contraction ring").

The cervix lies below a line joining the symphysis and coccyx, instead of above it as in our case. The os externum is easily recognised, the tips of the lips being 1·4 in. (3·5 cm.) apart. The os internum is more difficult to determine. Schroeder places it anteriorly at the angle where the "canal bends at a right angle on itself," and "the persisting cervical mucous membrane rich in glands sharply abuts on the thin decidual layer above the os internum." Posteriorly, he places it about 2 cm. above the point where the mucous membrane loses its characteristic glandular structure, the intervening space being occupied by a very thin mucous membrane, the result of the stretching of the upper portion of the cervix.

SECOND STAGE OF LABOUR (Sections by *Braune*, *Chiari*, and *Chiara*).

From the second stage we have three sections—by Braune of Leipsic, Chiari of Prague, and Chiara of Milan.

V. Braune's is that of a *primipara (?), aged about* 35, *who drowned herself while labour pains were going on.* No further history is given of the case; but, before freezing the cadaver, it was ascertained that the head of the child was in the pelvis, the bag of membranes unruptured and bulging in the vagina as a tumour the size of an apple.

VI. Chiari's *case* is likewise *a primipara, aged* 29, *who died of tuberculosis.* There is no further history, but it is noted that before freezing the fundus was found three finger-breadths above the umbilicus, and the back of the child to the left side. The vaginal orifice showed the remains of the hymen, and a short distance (1½ cm.) within it the finger felt the distended bag of membranes, and behind this the fœtal head almost filling the pelvis, slightly movable, and with the posterior fontanelle to the left.

VII. Chiara's case is a *IV.-para, who died of syncope during spontaneous version of the fœtus.* Former labours were normal. The midwife had ruptured the membranes; and, pains coming on, an arm and loop of cord were driven down. A surgeon, called in, tried repeatedly to turn but failed, and sent the patient to the hospital where she died a few minutes after admission.

Although Chiara's case is from a pathological labour, we place it alongside of Braune's and Chiari's. Braune's is put before Chiari's; because, while in both cases the membranes are unruptured, the child's head is rather higher in the pelvis in the former.

Comparing these three sections, we note, first, that the utero-vesical fold of peritoneum is in Braune's section ·8 in. (2 cm.), in Chiari's 1 inch (2½ cm.) above the symphysis, and in Chiara's is not indicated. The *posterior* reflection of peritoneum appears in Braune's between sacrum and coccyx, in Chiari's between fourth and fifth sacral vertebræ, in Chiara's is not given.

Vertically, the *fundus* in Braune's and Chiari's is at same level—the junction of the second and third lumbar vertebræ; in Chiara's it is higher, at the upper border of first lumbar—probably due to the fact that we have a larger portion of the fœtus (comprising its head) still above the brim.

In glancing at these three sections, placed side by side, we are at once struck with the difference in the *contour of the uterus* in Braune's and Chiara's compared with Chiari's. In the first two, the section of portion of the uterus above the brim approaches a circle,[1] the long diameter at right angles to the brim being only slightly longer than the antero-posterior. [Long diameter in Braune's 8 inches (20 cm.), Chiara's 8¾ inches (22¼ cm.); antero-posterior diameter in Braune's 7½ inches (18½ cm.), Chiara's 8⅛ inches (20½ cm.)] In Chiari's the long diameter is almost twice that of the short—6·4 inches (16 cm.) and 3·6 inches (9 cm.)

We are also struck with the difference in the direction of the *axis of the uterus.* Taking a line drawn from the centre of the conjugate and at right angles to it as representing the axis of the pelvic brim, we find that the long axis of the uterus almost coincides with this in Braune's, is only slightly divergent from it in Chiara's, while in Chiari's it is so divergent as to be almost parallel to the spinal column.

In all these cases the *uterine wall* becomes remarkably thinner when we come to its lower third—this thinning being more marked on the anterior than on the posterior wall. In Braune's and Chiara's the venous sinuses are less distinctly seen than in Chiari's. In Braune's, indeed, there are none represented except one large one opposite to what he calls the os internum; while in Chiara's, one or two are seen over the fundus. It is hardly justifiable to reason from so few specimens, but we think (as Braune has pointed out with regard to his own case) that Braune's, and probably Chiara's, represent the condition of the uterus during a pain, while Chiari's represents it in the interval—the difference in the condition of the uterus being seen in the direction of the long axis, its shape, and the condition of its venous sinuses. In one word, as we already know from clinical experience, the *uterus during a pain erects itself, becomes globular, and has its circulation arrested.*

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[1] The globular shape is in Chiara's preparation partly due to child's head being above the brim, but in Braune's this is not the case.

With regard to *the cervix,* we look separately at the os externum and the os internum.

The *os externum* is not difficult to define, as it forms a well-marked ridge, and the transition from vaginal to cervical epithelium is well defined. In Braune's and Chiari's, this ridge runs from about opposite the middle of the symphysis (being rather below this in Braune's) to opposite the fifth sacral vertebra in Braune's and the third in Chiari's. In the left half of Chiara's section there is a ridge running from above the middle of the symphysis to the second sacral vertebra, which looks like the os externum, but unfortunately is not named.

The *os internum* is placed by Braune at the so-called coronary sinus, ·8 inches (2 cm.) above the utero-vesical fold of peritoneum. At this point the uterine wall becomes distinctly thicker, and there is a ridge running from it to a point in the posterior wall opposite to the promontory and 5 inches (12½ cm.) above the posterior fold of peritoneum, where also a small vein is seen in section and the uterine wall bulges distinctly inwards over the neck of the child. No microscopic examination is given.

Chiari also figures a large vein anteriorly, ·68 inch (1·7 cm.) above the utero-vesical fold of peritoneum; posteriorly, ·8 inch (2 cm.) below the promontory and 2·6 inches (6½ cm.) above the pouch of Douglas. Here also the wall begins to thicken, but not so suddenly as in Braune's case. Chiari made microscopic examination of the anterior and posterior walls, with the following results.—Anteriorly we have the decidua extending beyond the coronary vein and the utero-vesical fold of the peritoneum, as far as 1½ cm. below the latter. Then comes about 1 inch (2·3 cm.) of mucous membrane showing palmæ plicatæ, which meets with the vaginal epithelium on the most projecting part (not the farthest down) of the ridge marking the os externum. The microscopic characters are similar on the posterior wall:—Coronary vein, 1·2 inch (3 cm.) of thinner decidua, ·8 inch (2 cm.) of palmæ plicatæ to top of ridge marking os externum, then vaginal epithelium.

From the microscopic examination, he concludes that the os internum is not where we have the coronary vein and thinning of the walls, but below this where the decidua stops and the palmæ plicatæ begin; this makes the cervix only ·8 inch long, and the os internum in his case about 3 cm. below the coronary vein and 1·7 cm. below the utero-vesical fold of peritoneum, or about the level of the brim of the pelvis. The corresponding point with relation to the peritoneum and vein in Braune's section, is about the same level; there is a wrinkle in the uterine surface here, and the length of the cervix becomes only 1·6 inch (4 cm.). In Chiara's preparation we have no data to go on as to the os internum.

The *placenta* is in Braune's and Chiari's situated on the posterior wall. As it is not divided mesially, we can make no deduction as to the area of its attachment in proportion to that of uterine cavity; but it is important to note that in neither case has any portion of it become separated,—Chiari, in fact, expressly describes it as "nirgends abgelöste, sondern überall festhaftende" ("nowhere separated, but everywhere firmly attached"). In Chiari's it is remarkably thick in its upper third (1·8 cm.), compared with the rest of it (average, 6 cm.). Whether this be due to the uterine wall's having contracted more in this situation or simply to a variation in thickness in the cotyledons of the placenta, we cannot say. As the uterine wall is not thicker here, the latter is probably the explanation. In Chiara's preparation the placenta is obscured by blood-clot.

The condition of the *membranes* is described in Chiara's only. They are closely attached all over the uterine cavity down to the level of the coronary vein. Here is seen a raised white sinuous line running round the uterus, below which the membranes can "with the slightest pull be drawn off the uterine wall." This raised white line is due to a peculiar folding of the chorion and decidua, which have here become detached from the uterine wall and thrown into a number of convolutions over which the amnion passes without dipping down between them. This relation of the membranes gives us a datum for fixing approximately the os internum, and seems to us to be an additional reason for placing it where Chiari does.

As before labour begins the membranes are everywhere in relation to wall of uterus, after the cervix is dilated there must be an area of uterine wall free of membranes, corresponding to the now free surface of the bag of membranes in the cervical canal; that is to say, the os internum must always be at a lower level than the line of attachment of the membranes. It is evident that this segment of uterus free of membranes will be much smaller than one would at first sight suppose. The distance from the tip of the bag of membranes to their line of attachment on the uterine wall will not correspond in length to the distance from the os internum to that line, but be very much longer; for, on the one hand, the membranes will have stretched; and, on the other, the uterine wall, instead of forming a cap to the cone, is pulled down round its girth so as to form a band round the base.

With regard to the *fœtus*, we must put on one side Chiara's case, in which the normal attitude has been destroyed by spontaneous evolution. We find that the three pairs of fœtuses—two before labour, two first stage, and two second stage—suggest an interesting comparison. In the first two, *before labour*, the general contour is an oval, of which the long axis is not greatly in excess of the short; the flexures of the different parts of the body are not very acute, the limbs being, so to speak, "comfortably disposed;" the long axis is not straight, but gently curved on the lumbar region of the spine. In the two of *the first stage*, we have a similar disposition of the limbs; but the head is dropped on one shoulder, so that its long axis forms a distinct lateral angle with the long axis of the body. As the fœtus was in both cases dead, this drooping of the head is probably due to the limpness of the body. In the two during *the second stage*, the general contour of the body is that of an elongated oval. The flexures of the different parts are increased, the disposition of the limbs suggesting an uncomfortable degree of compression. The long axis of the oval in Braune's case corresponds nearly to the axis of the brim, in Chiari's it curves on the promontory of the sacrum. It is worthy of note that although the liquor amnii has not escaped in either of these cases, the breech of the child is in contact with the fundus uteri.[1] The result of the comparison of these fœtuses shows us that, during the second stage, the fœtus becomes elongated and its limbs compressed, so that general outline is more regular.

With regard to the *structures in the pelvic floor*, the upward displacement of the bladder and other parts of the pubic segment has already been fully described by Dr Hart. The fundus of the bladder is in Braune's case ¾ of an inch, in Chiari's 1 inch, and in Chiara's 2 inches above the pubis. It is difficult to estimate the amount of this drawing up, as the bladder, rarely being perfectly mesial, its whole extent does not appear in a vertical mesial section. Braune describes the bladder as lying also behind the symphysis and even below it, and Chiari's section shows two-thirds of the bladder below the brim. We have thus an explanation of the production of vesico-vaginal fistula, through compression of the bladder against the pubis.

The sacral segment is pushed downwards, so that the pelvic floor projection is very much increased. Unfortunately, we have no data for comparing this with those in the first stage or before labour, as the sections do not pass through the coccyx. The anus and perineal body are evidently both on a lower level than before labour.

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[1] The head has descended in Braune's case so far that its lowest point is ¾ of an inch beyond outlet of the pelvis (line joining lower border of symphysis and tip of pelvis). In Chiara's it has descended ½ an inch farther.

III.—THE DIAGNOSIS AND TREATMENT OF CEREBRAL ABSCESS DUE TO EAR DISEASE.

By P. M'Bride, M.D., F.R.C.P.E., F.R.S.E., Surgeon to the Ear and Throat Department of the Edinburgh Royal Infirmary, and Lecturer on Diseases of the Ear and Throat, Edinburgh School of Medicine; and
A. G. Miller, F.R.C.S.E., Surgeon to the Edinburgh Royal Infirmary, and Lecturer on Surgery, Edinburgh School of Medicine.

(*Read before the Medico-Chirurgical Society of Edinburgh, 2nd March* 1887.)

Part I., by P. M'Bride.

(*Continued from page* 1003.)

(4.) *Should Treatment be attempted in Cases of Otitic Intracranial Suppuration?*

Although cerebral abscesses due to injury have been repeatedly treated with success, yet those caused by ear disease have generally been allowed to end fatally, without any attempt at interference. So far, I believe, only three successfully treated cases have been published, recorded by Schondorff,[1] Truckenbrod,[2] and Gowers and Barker.[3] In the two former, however, there was an external fistula, the surrounding scalp being œdematous and tender. In the last-mentioned case, an abscess of the temporo-sphenoidal lobe was correctly diagnosed by Gowers, and successfully operated upon by Barker. In this instance the point of the trephine was inserted 1¼ inches behind, and the same distance above the meatus. Before proceeding to operate on the bone, the state of the opening for the mastoid emissary vein was examined; for Mr Barker believes that, where the suppuration is behind the tentorium on the surface of the petrous bone, pus will escape through this foramen. I doubt the accuracy of his conclusion, for it seems to me that this view can only hold in cases of diffuse cerebellar suppuration, but not in localized abscess.

In a very interesting and suggestive paper,[4] Mr Hulke advocated opening otitic intracranial abscesses, and although his cases were unsuccessful, and although in them an examination of the ear was not carefully undertaken, either during life or after death, yet his observations are of the greatest value. This author rightly calls attention to the importance of low temperature and pulse as a diagnostic of abscess, as opposed to meningitis, in cases of ear disease with cerebral complications; in all his cases (three in number) both temperature and pulse were subnormal. Unfortunately, however, cerebral abscess may co-exist with high fever. In Dr Gower's case this was so, but at the beginning of the disease pulse and temperature were abnormally low. I would, therefore, combining these facts with my own experience, lay considerable stress, in any given case, on the fact that, whatever the present condition, the pulse and temperature had, after the onset of acute symptoms, been at any time subnormal.

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[1] *Archiv für Klin. Chir.*, 1884.

[2] *Archives of Otology*, 1886, operation by Schede.

[3] *British Medical Journal*, Dec. 1886.

[4] *Lancet*, 3rd July 1886.

Hulke in one case found pus in the cerebellum, and to reach this part safely, he perforated the occipital bone "two centimetres behind and inwards from the mastoid process, the crown of the trephine encroaching on the inferior curved line. This spot," he goes on to say, "was selected as being sufficiently beneath the lowest level of the horizontal part of the lateral sinus, and also sufficiently removed inwards from the descending part of the sinus. The dependent portion of the spot was also thought advantageous for the drainage of the abscess, if found. The spot was easily uncovered, by raising the scalp with a horse shoe incision, the ends of which lay slightly above the level of the external occipital tuberosity, and the bend slightly below the level of a line joining the apices of the mastoid processes. The muscles were divided by a cut down to the bone parallel to the superior curved line, and, together with the periosteum, peeled down to a sufficient extent with a raspatory. The inferior curved line easily felt proved a good guide to the selected spot. The severed occipital artery was easily secured with a pressure forceps and afterwards tied."

This, then, seems the best method of reaching the cerebellum for operative purposes, and although we have seen that the differential diagnosis between diffuse meningitis and abscess is often difficult, if not impossible, yet having come to the conclusion that we have a localized collection of pus to deal with, there are certain symptoms which would guide us in defining its position. In cerebellar abscess we should expect severe occipital headache, distressing vomiting, giddiness, and in cases due to ear disease, absent bone conduction.

Abscess near or in communication with the tympanum is, however, more common, especially when the tuning fork test shows the auditory nerve to have escaped. It is this form of abscess which seems to me to afford the best prospects of treatment. As I have attempted to show, it is possible in many cases to distinguish between intracranial suppuration and phlebitis, but it is not often possible to distinguish positively between diffuse and localized suppuration. I cannot help thinking, however, that opening the skull even in the former may not expose the already doomed patient to additional risks. In these cases of purulent meningitis following ear disease, the intracranial inflammation is generally, if not always, already septic, because as a rule the putrid middle ear communicates with the meninges. It seems to me, moreover, that this condition may kill in one of two ways, viz., either by (1), compression, or (2), general sepsis. No doubt, by opening the cranium we diminish tension, and if tension, then pressure. Against the latter we are powerless in this locality. It seems to me, therefore, that in a case of suppurative ear disease which threatens to end fatally from intracranial complications, and in which we have not special indications of phlebitis, we should operate—more especially if we believe that the inflammation has spread through the roof of the tympanum—the most common form be it remembered. Having arrived at this conclusion, we next ask, What is the best method of operating? It has been proposed by Sutphen[1] to force a trochar through the roof of the middle ear, but even in a case where the abscess was correctly diagnosed, this method of treatment was unsatisfactory, by the author's own showing. It must be remembered that in most of these cases the abscess is in intimate relation with the roof of the tympanum, and I am strongly of opinion that it is desirable to reach this spot with as little injury to the brain and its membranes as possible. It appears to me that this end can best be obtained by making a dissection of the auricle downwards so as to define the osseous meatus. When this has been done, an opening should be made just above and in front of it—a proceeding which exposes the dura mater within a very short distance of the roof of the tympanum, with which the great majority of cerebral abscesses are in intimate relation, without any danger of wounding the middle meningeal artery. My part of this paper does not carry me further than this, and I leave it to Mr Miller to describe two cases, in which the issues were unfortunately fatal—a termination at least in one of which (for in the other we obtained no sectio) could not possibly have been averted. In that case we were enabled to diagnose the presence of phlebitis of the lateral sinus during life, and it seems to us that the presence of this complication—were it diagnosed with a fair amount of certainty—would make us hesitate to operate in future. At the same time, it must not be forgotten that it has been proved beyond doubt by Griesinger and others, that sinus phlebitis may be recovered from.

Since the above was written Professor Greenfield has published a case of cerebral abscess due to ear disease, successfully operated on by Mr Caird.[2]

Most of those present who are interested in the subject have no doubt read Professor Greenfield's paper. The patient was admitted to the Infirmary in a state of commencing coma; headache was complained of, and paralysis of the third nerve developed after his admission. There was a slight amount of offensive pus in the meatus, and the tympanic membrane showed a small perforation. The pulse was not accelerated, the temperature persistently subnormal, and there was left optic neuritis.

In papers of the kind the reader usually expects to find a critical digest of those mental processes on the part of the physician which led to his diagnosis.

Now in this case, as recorded by Prof. Greenfield, it is difficult to see on what facts he based his opinions. We are told certainly that he arrived at the view that the case was one either of abscess or of tumour, "with," to use his own words, "a very strong preponderance in favour of abscess," but the author adds, "I need not at the moment discuss the grounds of this view." There were, however, other possibilities which we might reasonably expect to find taken into account, such as sinus phlebitis and diffuse meningitis, which we have seen to be comparatively common complications of suppurative ear disease; and, moreover, it is the reason for the diagnosis of abscess which we should have expected to be put prominently forward, instead of being entirely omitted. Further on in the paper, without, however, having expressed any definite grounds for his opinion, the following sentence occurs, "There now appeared to me to be every probability in favour of the diagnosis of abscess; and for reasons which I shall afterwards discuss, it appeared to me that the evidence was in favour of the abscess being situated in the left temporo-sphenoidal lobe, and that if so, it had extended forwards and inwards, so as to occupy a position near the front and towards the inner aspect of the lobe."

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[1] *Archives of Otology*, vol. xiii. p. 28.

[2] *British Medical Journal*, 12th Feb. 1887.

I have carefully perused and reperused the subsequent sentences, and have been entirely unable to find any grounds for the supposition that the abscess extended forwards so far as to justify the seat of operation selected in this case. That it extended inwards was shown by the involvement of the third nerve, and I cannot help thinking also by the unilateral optic neuritis, which I take it may have been in part due to pressure on the cavernous sinus. That pus was reached in this case by an operation which pierced the skull so far forwards and so high up as the junction of the temporal, parietal, and sphenoid bones was, it seems to me, due to the circumstance—fortunate alike for physician and patient—that the cerebral abscess was an exceptionally large one. Had it contained one instead of two ounces of pus, I doubt whether it could have been evacuated by the opening made.

But, although Prof. Greenfield has not called attention to them, there were facts in the history of the case which pointed strongly to cerebral abscess communicating with or near the roof of the tympanum. Thus the presence of optic neuritis showed that the patient was suffering from intracranial mischief; the existence of chronic middle ear suppuration rendered it probable that he had either diffuse suppurative meningitis, phlebitis of the lateral or other sinuses, or abscess. Meningitis or phlebitis would, however, probably have caused acceleration of the pulse, elevation of temperature, and other symptoms which were not present; therefore, judging from the persistently subnormal temperature and slow pulse, the diagnosis of abscess could easily be arrived at. As to its localization, the paralysis of the third nerve showed that the collection of pus was probably in front of the tentorium, and a knowledge of the fact that most intracranial abscesses in this situation are in intimate relation with the roof of the tympanum, would naturally point to the temporo-sphenoidal lobe as the part affected. As I said, however, before, there was nothing to justify the belief that the abscess cavity extended any great distance forwards. The size of the collection of pus was exceptional, and it was to this very fact that the success of the case was due. Now, if in such cases the operation I have proposed were adopted, it would not matter whether the abscess extended backwards or forwards provided only it was, as such abscesses generally are, in contact with the roof of the tympanum.

General Conclusions.

(1.) That in a case of chronic middle ear suppuration, whether the mastoid region be tender or not, opening the mastoid antrum should not be too long delayed if deep-seated pain in the ear be complained of, and if the general symptoms point to head mischief.

(2.) That in advanced cases we should attempt to arrive at an exact diagnosis as to the nature of the intracranial mischief, with a view to operative interference.

(3.) That we can in most cases detect sinus-phlebitis from the presence of pyæmic symptoms and from local manifestations. Thus, if the lateral sinus be involved, the region of the jugular vein will often be found tender and occasionally corded; if the cavernous sinus be at fault, we should expect œdema of the retina, and around the eye, perhaps also exophthalmus (for further information on this point I must refer to special treatises).

(4.) That having excluded sinus-phlebitis the diagnosis may be said to lie between diffuse meningitis and localized abscess.

(5.) That the situation of the intracranial suppuration will probably be behind the tentorium if bone conduction be lost, *i.e.*, if the auditory nerve is involved. That, in my opinion, this is also more likely to be the case when there is marked inflammation of the mastoid (*i.e.*, its external and posterior part), than when the pain seems only to proceed from the tympanum; but I have been able to obtain no definite proof of this. The results of aural examination must, of course, be taken together with the general symptoms in localizing the brain lesion.

(6.) That the most common seat of localized abscess and starting point of suppurative meningitis is near the roof of the tympanum.

(7.) That we cannot in most cases distinguish positively between localized and diffuse suppuration; but that in cases where pulse and temperature are subnormal, the probability is in favour of localized abscess.

(8.) That the point chosen for opening the skull in otitic cerebral abscess should be just above and in front of the osseous meatus.

(9.) That such an operation may save a number of cases of localized abscess, and may possibly benefit some in which the suppuration is more diffuse.

(10.) That the propriety of exploring the cerebellar region is not so clear, and that this operation should only be undertaken when the presence of pus behind the tentorium is almost certain.

Table of Fatal Cases of Middle Ear Suppuration causing Intracranial Complications.

No.	Author and Reference.	Age.	Male.	Fem.	Part of Ear affected.	Brain Lesion.
1	Pooley, *Transactions of Amer. Otological Soc.*, 1879.	23	0	1	Tympanum and labyrinth.	Cerebellar abscess.
2	Kipp, *Z. f. O.*,[1] viii. p. 275.	23	1	0	Tympanum and mastoid.	Abscess of temporal lobe.
3	M'Bride, *Journal of Anat. and Phys.*, xiv.	...	0	1	Tympanum, mastoid, and labyrinth.	Cerebellar abscess.
4	Schwartze, *A. f. O.*, xvii. p. 111.	22	0	1	Tympanum, mastoid, and labyrinth.	Diffuse meningitis.
5	Pooley, *Z. f. O.*, ix.	30	1	0	Tympanum and mastoid.	Diffuse purulent meningitis.
6	Pooley, *Z. f. O.*, ix.	45	1	0	Tympanum and mastoid.	Abscess of middle lobe.
7	Weil, *Betz. Memorabilien*, 1881, vol. ii.	...	0	1	Tympanum and mastoid.	Cerebellar abscess bursting through tentorium.
8	Weil, *ibid.*	...	1	0	Tympanum and mastoid.	Purulent meningitis.
9	Habermann, *A. f. O.*, xviii. p. 87.	7	0	1	Tympanum and mastoid.	Thrombosis of lat. sinus.
10	Schwartze, *A. f. O.*, xviii. p. 279.	16	1	0	Tympanum and mastoid.	Diffuse basilar sup. meningitis.
11	De Rossi, *Statistics of Clinique*, 1879, 80, abst. *A. f. O.*, xix. p. 88.	32	1	0	Tympanum and mastoid. (no perforation !)	Diffuse meningitis.
12	Moore, *A. o. O.*, xi. p. 25.	50	1	0	Tympanum and mastoid.	Cerebellar abscess and thrombosis of lat. sinus.
13	Munson, *A. o. O.*, xi. p. 29.	39	0	1	Tympanum.	Abscess of middle cerebral lobe.
14	Ryerson, *Canadian Lancet*, 1881.	a child	0	0	Tympanum and mastoid.	Pus under dura mater covering tymp. roof.
15	Bürkner, *A. f. O.*, xix. p. 244.	20	1	0	Tympanum and mastoid.	Thrombosis of lat. sinus.
16	Same as last.	17	1	0	Tympanum and labyrinth.	Diffuse meningitis and small abscess in Pons.

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[1] *A. f. O.—Archiv für Ohrenheilkunde. Z. f. O.—Zeitschrift für Ohrenheilkunde. A. o. O.—Archives of Otology.*

No.	Author and Reference.	Age.	Male.	Fem.	Part of Ear affected.	Brain Lesion.
17	Stacke, *A. f. O.*, vol. xix. (abstract) p. 297.	26	1	0	Tympanum and mastoid.	Abscess of dura mater over roof of tympanum and thrombosis of lateral sinus.
18	Christinneck, *A. f. O.*, vol. xx. p. 41.	1y4m	1	0	Middle ear and labyrinth.	Purulent meningitis.
19	Mathewson, *Transactions of Amer. Ot. Soc.*, July 1882.	11	0	0	Tympanum.	Cerebellar abscess and pus over roof of tympanum.
20	Merill, *ibid.*	32	1	0	Tympanum.	Collection of pus over petrous bone.
21	Von Tröltsch, *Gesammelte Beiträge*, etc., see *A. f. O.*, xx. p. 189.	49	1	0	Tympanum, mastoid, and labyrinth.	Meningitis involving cerebrum and cerebellum.
22	Von Tröltsch, *ibid.*	30	1	0	Tympanum and mastoid.	Abscess of middle cerebral lobe and thrombosis of lat. sinus.
23	Von Tröltsch, *ibid.*	2¾	1	0	Tympanum, mastoid, and labyrinth.	Diffuse purulent meningitis.
24	Stacke, *A. f. O.*, vol. xx. p. 275.	17	0	1	Tympanum and mastoid.	Purulent basilar and spinal meningitis and cerebral abscess (right temporal lobe)
25	Jacoby, *A. f. O.*, vol. xxi. p. 73.	43	0	1	Tympanum and mastoid.	Purulent meningitis.
26	Andrews, *Med. Rec.*, America, Sep. 1883.	24	1	0	Tympanum.	Abscess of the middle lobe.
27	Same.	42	1	0	Tympanum and mastoid.	Thrombosis of lateral sinus and meningitis.
28	Same.	31	0	1	Tympanum and mastoid.	Abscess of hemisphere.
29	Bezold, *A. f. O.*, vol. xxi. p. 255.	11	1	0	Tympanum, mastoid, and labyrinth.	Diffuse purulent meningitis involving cerebellum. Thrombosis of lat. sinus. (old?)
30	Jacobson, *A. f. O.*, vol. xxi. p. 305.	29	0	1	Tympanum and labyrinth.	Thrombosis of lateral sinus.
31	Schubert, *A. f. O.*, vol. xxii. p. 63.	30	0	1	Tympanum and mastoid.	Abscess of middle lobe and thrombosis of lateral sinus.

No.	Author and Reference.	Age.	Male.	Fem.	Part of Ear affected.	Brain Lesion.
32	Schubert, *A. f. O.*, vol. xxii. p. 63.	8	0	1	Tympanum and mastoid.	Thrombosis of lateral sinus.
33	Sutphen, *A. o. O.*, vol. xiii. p. 28.	43	1	0	Tympanum and mastoid.	Abscess of anterior and middle lobes.
34	Sutphen, *ibid.*	21	1	0	Tympanum and mastoid.	Thrombosis of lateral and sup. long. sinus.
35	Kiesselbach, *Zeitungsbericht der Phys. Med. Soc.*, Erlangen, July 1884.	19	1	0	Tympanum and mastoid. (Labyrinth ?)	Abscess of temporal lobe, and lepto-meningitis.
36	Hedinger, *A. o. O.*, vol. xiv. p. 79.	63	0	1	Tympanum and mastoid.	Thrombosis of lateral sinus and jugular.
37	Hedinger, *ibid.*	50	0	1	Tympanum and labyrinth.	Cerebellar abscess.
38	Stacke and Kretschmann, *A. f. O.*, vol. xxii. p. 252.	35	1	0	Tympanum and mastoid.	Cerebral abscess over roof of tympanum and thrombosis of lat. sinus and jugular.
39	Stacke and Kretschmann, *A. f. O.*, vol. xxii. p. 253.	19	1	0	Tympanum and mastoid.	Purulent meningitis on both sides of tentorium and thrombosis of lateral sinus.
40	Rotholtz, *A. o. O.*, vol. xiv. p. 133.	20	0	1	Tympanum and labyrinth.	Cerebellar abscesses, 2 communicating with each other, and purulent meningitis.
41	Hessler, *A. f. O.*, vol. xxiii. p. 111.	8	1	0	Tympanum and mastoid.	Diffuse purulent lepto-meningitis and abscess involving occip. and temporal lobes.
42	Bull, *Norsk Magazin for Lägevidenskaben.*	16	1	0	Tympanum.	Thrombosis of lateral sinus and jugular.
43	Kretschmann, *A. f. O.*, vol. xxiii. p. 222.	9	1	0	Tympanum and mastoid.	Thrombosis of lateral sinus.
44	Kretschmann, *ibid.*	6	1	0	Tympanum and mastoid.	Thrombosis of lateral sinus.

PART II., by A. G. MILLER.

Report of Cases drawn up by Thomas Mackenzie, M.B., C.M., Resident-Surgeon.

CASE I. — —, aged 20, student of medicine, was admitted into the Students' Ward of the Royal Infirmary on Thursday, 18th November 1886, complaining of pain in right eye, on right side of head and face, and on right side of neck.

History.—For one or two years patient was the subject of a discharge from the right ear, which he treated by occasional syringing. This discharge, so far as he knew, was not subsequent to scarlet fever or measles. During the same period he used to salivate to excess.

About the beginning of November the discharge from the ear ceased, and patient felt perfectly well. On Wednesday, 10th November, he did his work as a dresser in Ward XVIII., and remained in Hospital till midnight to see whether any cases should be brought in. On the following morning he felt out of sorts and remained indoors. In the afternoon he had a slight rigor, followed by pain in the right ear and down the side of the neck. Dr Stewart of Merchiston attended him from this time till his admission into the Infirmary. A small blister had been applied over the sterno-mastoid to relieve the pain in the neck, and sulphate of quinine, 6 grains, had been given every four hours. Subsequently pain occurred also in the right temporal region and eye, accompanied by lachrymation, photophobia, and injection of the conjunctiva. On Sunday, 14th November, he had a severe rigor; the pain continued, but the temperature did not exceed 100° F. until Thursday morning, 18th November, when he was found to have a temperature of 103°. He was then seen by Mr Miller in consultation, and his removal to the Infirmary agreed upon.

On his admission he was seen by Mr Miller, Dr M'Bride, and Mr Berry, and was found to be suffering from intense pain in the right temporal region and on the right side of the neck. There was twitching of the muscles of the same side.

The tympanum was perforated, and there was a slight amount of septic and very offensive discharge from the ear. Pupils were equal; there was some degree of photophobia; the fundus was normal. Temperature, 103°; pulse, 80. Diagnosis—Septic intracranial inflammation. The ear was syringed out with warm boracic lotion, and three leeches were applied behind the ear. The administration of quin. sulph., 6 grains every four hours, was continued; and potass. bromid., 20 grains, was given at bedtime. The leeches afforded him great relief.

19*th Nov.*—Pain still present, though not so severe. Leeches repeated. 9.30 P.M.—Slight rigor. 11.45 P.M.—Temperature, 104°·8.

20th Nov., 12.45 A.M.—Restless; potass. bromid., 20 grains. 1.20.—Temperature, 102°·4. Slept at intervals from 1.20 till 6.15, sometimes one hour, sometimes half an hour, only awake a few minutes between each sleep. Taking plenty of nourishment—milk and beef-tea. Given sod. carbol., 20 grains, every three hours. 9 A.M.—Temperature, 102°·6; rigor. 9 P.M.—Temperature, 101°·6.

21st Nov.—Pain continues as before. The severity of the pain in the neck has increased. The lymphatics and glands on the right side of neck and back of head being very painful and enlarged. Pains greatly aggravated by movement. 1.15 A.M.—Temperature, 103°. 4 P.M.—Temperature, 104°. 9 P.M.—98°·8. Opening through tympanum enlarged; ear syringed with sod. bicarb.

22nd Nov.—Induration on right side of neck made out to be not in sterno-mastoid, and not in veins. 1.20 A.M.—Temperature, 104°·8. 4.30 A.M.—Temperature, 103°. 8 A.M.—Temperature, 101°·8. 11 A.M.—Temperature, 104°·6. 4 P.M.—Temperature, 102°·6. 5 P.M.—Temperature, 105°. 8 P.M.—Temperature, 100°·6. 11.15 P.M.—Temperature, 101°·6. Very restless; hyoscy., 30 minims; slept well at intervals.

23rd Nov.—Slept soundly till 1.15 A.M., when he woke up shivering; rigor lasted ten minutes. Temperature, 105° immediately after rigor; awake until 1.30; slept well until 3.15. Tympanic membrane incised by Dr M'Bride. 4 A.M.—Temperature, 102°·6. Very thirsty since rigor at 1.5. 6.30 A.M.—Perspiring freely. During the night a considerable amount of very offensive matter was discharged from the ear. Syringing with boracic continued. 8 A.M.—Temperature, 99°·4. 5.30 P.M.—Temperature, 106°·6.

24th Nov.—Very restless, and delirious. Pain as before. Right ear discharging freely. External strabismus of right eye, and commencing optic neuritis, made out by Dr Wyllie. Patient very restless, and complaining of pain in head and neck; given 40 minims of paraldehyde; slept well for an hour and a half.

25th Nov.—Patient still very restless and unconscious. 3 A.M.—Given 30 minims hyoscyamus; slept for an hour. Temperature, 103°·6. 6 A.M.—Very delirious and restless; given 40 minims paraldehyde; slept two hours. Patient had been seen daily by Dr Wyllie and Dr M'Bride, in consultation with Mr Miller.

At the first visit on the 25th the temperature was found to be 101°·2, having fallen from 105° the day before; the optic neuritis marked, the respiration of the Cheyne-Stokes character, and the patient quite unconscious. It was agreed, therefore, that an opening should be made into the cranium, in the hope that some localized abscess might be found and evacuated. The patient was so manifestly moribund, that anything which gave him a chance seemed justifiable. The general symptoms, more especially the fluctuating temperature, the rigors, perspiration, and pain in the region of the jugular, rendered it extremely probable that the case was one of diffuse suppurative meningitis, with thrombosis of the lateral sinus.

The consent of the parents having been obtained, the operation was performed at 4 P.M. by Mr Miller, in the presence and with the assistance of Dr Wyllie and Dr M'Bride. The patient having been placed under the influence of chloroform, a curved incision was made over the right ear, about 3 inches in length, by means of which the auricle was drawn down. The temporal fascia and muscle were then incised down to the bone, and the pericranium scraped off the squamous portion of the temporal bone for a distance of nearly 1 inch in diameter. The external auditory meatus was thus also thoroughly exposed.

Having previously ascertained that a point about a quarter of an inch above and in front of the external auditory meatus, just above the commencement of the zygomatic arch, easy access could be obtained to the middle fossa of the skull, a small opening was made at this point by chipping with a small gouge and mallet. On penetrating the thin portion of bone at this point, pus was at once obtained, amounting to only a few drops, however. The opening was then enlarged to about the size of a threepenny piece, and a probe passed in between the dura mater and the petrous portion of the temporal bone; for it was found, as expected, that the point at which the opening had been made was just above the junction of the squamous and petrous portions.

The dura mater was thickened, roughened, and quite separated from the bone, which for some distance around was felt to be bare. There was no collection of pus or abscess of any kind—little more than what came away at the first opening and what adhered to the probe being obtained.

It was agreed, therefore, to puncture the dura with a hypodermic needle. This was done in several directions, but no abscess found. The absence of pus being verified by Dr Wyllie, who examined under the microscope the small amount of fluid that was obtained in the needle. The dura was then incised and a director thrust in, but no pus found. There was sharp hæmorrhage from the incision in the dura, but this was stopped by manual pressure kept up for about half an hour.

After the operation the patient became much quieter, slept almost constantly, and on waking appeared perfectly conscious. 9 P.M.—Temperature, 102°·4; pulse, 88.

26th Nov.—Patient sleeping frequently and quietly; on waking quite conscious, and not so deaf as formerly. About 10.30 P.M. became gradually unconscious, and died quietly. Temperature 107°, having steadily and rapidly risen from 100°·4 at 8.30 P.M. on the 25th.

Report of Post-mortem Examination by Dr Bruce.

— —, æt. 20, Ward XXVII. Died 26th November; post-mortem, 28th November 1886.

Dr M'Bride's Diagnosis.—Chronic suppuration of middle ear. Perforation of tympanic membrane; a small quantity of granulation in tympanum (a crucial incision in tympanic membrane, done after urgent symptoms). Intracranial suppuration, probably extending through roof of tympanum. Possibly also thrombosis of cavernous and lateral sinuses (at beginning of attack fundus was normal; two days before death optic neuritis and external strabismus noted).

Post-mortem.—Rigidity slight in legs; lividity marked; abdomen green; a semilunar incision above right ear. Auricle had been dissected down, exposing squamous temporal and osseous meatus. An opening the size of a threepenny piece made by chiseling through squamous temporal a little above osseous meatus. (This done by Mr Miller 25th November, with evacuation of small quantity of pus, the dura mater being thickened and rough.)

Head.—On raising calvarium a little fœtid pus at vertex, superficial to dura mater, having apparently passed through ruptured Pacchionian bodies. Dura mater tense; small pale gelatinous clot in superior longitudinal sinus at vertex; on reflecting dura mater on right side, a thin layer of yellow fœtid pus, of creamy consistence, in arachnoid space (pia mater underneath this externally congested with capillary hæmorrhage); on reflecting left side of dura, a very small quantity of sero-purulent fluid in arachnoid space near middle line.

On right side dura raised from squamous temporal, outer half of petrous portion, and occipital bone over an irregularly quadrilateral area, about two and a half inches in diameter; over this area the outer surface of dura is covered with a dirty grayish fœtid slough. Dark clot in left lateral sinus; right lateral sinus pinkish, soft, purulent clot; none in cavernous sinus. Perforation in upper surface of petrous bone about one-eighth inch in diameter, overlying the tympanum, and within half an inch of the perforation made by Mr Miller, about one-quarter of an inch beyond the aperture, in the petrous portion the bone was so thinned as to give way on pressure (slight). Internal ear and mastoid cells free.

CASE II. — —, age 19, tailor, Keswick, Caithness. Admitted to Ward XVIII. on Thursday, 8th December 1886, complaining of pain on right side of head and neck, with discharge from right ear.

History.—About ten years ago patient is said to have had scarlet fever. For nine years he has suffered from discharge from the right ear, which has varied in quantity and occasionally been attended by pain. Two years subsequent to the onset of the discharge from the ear he had an attack of typhoid fever.

During the New Year holidays in January 1886, when at home in Caithness, patient one day became very feverish. Next day he suffered from headache and vomiting. Small red spots appeared over chest and abdomen. Feverishness continued for three weeks, during the whole of which time patient remained quite intelligent.

History of present attack.—A fortnight prior to his admission patient complained of pain, sometimes in his forehead and sometimes at the back of his ear. On Saturday, 26th Nov., he was seen by Dr Bramwell in the medical waiting-room, and advised to come into Hospital. On Thursday, 1st December, his nose bled freely. During the week he had at least three rigors, and vomited several times. Saturday, 3rd November, he went to his brother's house. There he had rigors daily, was very thirsty, and would drink nothing but cold water. On Saturday and Monday he vomited. On Wednesday he had two rigors—one at night, the other in the morning. As a rule the rigors came on at night or about 9 A.M. Says that he has occasionally seen double.

State on admission, 8th December 1886.—Somewhat thin; listless expression; lay on his side. Pain on right side of head and neck. Tenderness on pressure, especially in right occipital region. Sight good, no strabismus, pupils equal.

Ophthalmoscopic Examination by Dr Wyllie.—Veins at fundus engorged, otherwise normal.

Examination by Dr M'Bride.—Hearing absent on right side. Watch heard only when in contact. Tuning fork placed on vertex heard most distinctly on right side. Membrana tympani thickened and perforated.

Patient is quite intelligent, answers questions slowly and after an interval. Tongue furred and dry, intense thirst. Pulse 116, regular. Heart sounds normal. Skin hot and dry. Temperature 105° F.

Progress.—Temperature fell from 105° at 3 P.M. to 98° at 1 A.M. It then rose steadily to 103° at 7 A.M., there being a rigor at 5 A.M., which lasted for fifteen minutes.

From their experience in the former case, Drs Wyllie and M'Bride and Mr Miller at once decided that there was septic intracranial suppuration, and that the only chance which the patient had of recovery was, if possible, to find and evacuate the pus.

It was of course evident from the pain down the neck, the fluctuating temperature and repeated rigors, that even this would afford the patient but a slender prospect of recovery; for those facts, together with the general condition, history, etc., made it probable that there was phlebitis of the lateral and probably other sinuses, and that the intracranial inflammation was rather diffused than localized.

At 12 noon, on 9th December 1886, patient was operated upon in the large theatre of the Royal Infirmary. A curved incision was made over right ear, the auricle drawn down, ext. meatus defined, temporal fascia and muscle incised down to bone a little above the ext. meatus, and the temporal bone chiseled through carefully at a point about a quarter of an inch above and in front of ext. meatus.

The dura was found separated. No pus was seen. A probe passed along under the dura came readily on an opening into the tympanum, and passed in. A drainage-tube was put in and left. The dura did not bulge, and showed no tension or diseased condition beyond being separable from the bone for some distance round the aperture into the tympanum.

The wound was dressed with protective, corrosive sublimate wool, and iodoform. The ear was syringed out every three hours with, first, a solution of sod. bicarb., and thereafter with warm boracic lotion. Internally the patient was treated with sulphocarbolate of soda and sulphate of quinine.

After the operation the temperature fell gradually to 98°·6 at 1 A.M. on Saturday, 10th December. Again there was a rigor at 5 A.M., and by 7 A.M. the temperature was up to 103°·2. The subsequent course of the temperature is well seen in the two hour temperature chart.

10*th December*.—No headache; pain in neck and shoulder. Fundus oculi as before; veins congested. Slight twitching of face; twitching and irregular movements of arms and legs. Dorsal decubitus.

11*th December* 1886, 9 P.M.—Very restless; tossing about and moaning; wanting to go home; thinking he will not get better.

12*th December* 1886.—Much better; quieter; quite intelligent; less movement of arms and legs.

13*th December* 1886, 1 A.M.—Lying on right side; drowsy, yet restless; quite intelligent; well marked Cheyne-Stokes respiration. Pupils equal, moderately contracted; conjunctivæ congested. 10 A.M. — Looks better; more intelligent; answers questions readily. Feels tired, but has no pain. Respiration regular; occasional short coughs; very tenacious sputum-mucus, with a few streaks of blood. Pupils equal; icteric tinge of the conjunctivæ. 12 noon.—Chest examined by Dr Wyllie—normal. 2 P.M.—Turned on his back and jerked left arm and leg so violently that nurse could not keep on the bed clothes. Thereafter lay on his side and slept quietly. 11 P.M.—Slight rigor.

14*th December* 1886, 3 A.M.—Has been sleeping quietly; now restless twitching of right arm. 12 noon.—Ophthalmoscopic examination by Dr Wyllie:—Right eye, distinct optic neuritis (œdematous stage); left eye, congestion of veins as before. Intelligence remains good. Hypodermic needle introduced through dura; blood corpusles, no pus. Bile in urine.

15th December 1886.—Spent a very restless night; still no headache. 10 A.M.—Petechiæ on face, wrist, and knees. 12 noon.—Dura incised with tenotomy knife. Probe introduced into arachnoid space. No pus. Hypodermic needle introduced into temporo-sphenoidal lobe three times without giving any pain. 1st, Straight inwards; 2nd, Inwards and forwards; 3rd, Inwards and backwards. No pus.

16th December 1886, 12·30 A.M.—Respiration 56, noisy. Still intelligent; not so restless as last night. Pulse 130, weak and irregular. 9 A.M.—Pain in chest and back—right side. 4 P.M.—Petechiæ spread over chest and back. Lips livid, skin dusky and moist, with perspiration on face.

17th December 1886, 1 A.M.—Cheyne-Stokes respiration, 56 per minute.

18th December 1886, 7 A.M.—Died. No post-mortem examination could be obtained.

I wish to make only a very few remarks,—first, on the two cases just read, and next, on the operation performed.

1. Both cases died of septicæmia, and therefore were not, I think, fair tests of the risk to life incurred by the operation, the patients being septicæmic from the first.

2. Both were somewhat deceptive in their symptoms, for they apparently improved now and again. For example, Case I. improved greatly after the application of leeches, and both had frequent falls of temperature.

3. The temperature charts were very remarkable, and would have been misleading had records not been taken both frequently and regularly.

(*a*.) In the case of Case I. there was a fall from 105° at 6.30 P.M. on the 24th November to 101° at 4 P.M. on the 25th, though he was decidedly getting worse. In Case II. there was a fall for twelve hours after the operation, and for twenty-four hours before death.

(*b*.) In Case II. a record taken at 9 A.M. and 9 P.M. would have shown a decided and continuous fall of temperature from 103°·6 on the 14th December to 99°·8 on the 18th, when he died, although 104° was reached frequently during that period. In Case I. a fall of temperature was always succeeded by a rigor and rapid rise of temperature.

In regard to the operation, which I performed in both cases, I ought to say that I was guided by suggestions from Dr M'Bride, and by careful study of the relation of parts in the skull. We found that, at the spot already indicated in the record of each case, namely, about a quarter of an inch above and in front of the external auditory meatus, the squamous portion of the temporal bone is quite thin, and an aperture made there would be just above the junction of the squamous and petrous portions, and would give easy access to the point where the inflammation had penetrated through the roof of the tympanum.

As Dr M'Bride, Dr Wyllie, and I were quite certain that the inflammatory process inside the cranium had originated from the septic condition of the middle ear, we considered it the proper thing to go for the point of contact, namely, the roof of the tympanum. And the procedure above described seemed best fitted to effect this object.

From an aperture such as I made, very easy access is obtained to the floor of the middle fossa, and to the temporo-sphenoidal lobe also, for the purpose of evacuating an abscess if there is one. The operation is very simple, requiring special care only for the chiseling. It does not seem to produce any special effect on the patient in the way of shock.

By the curved incision over the auricle (which was suggested to me by Dr M'Bride) ready access is afforded, if necessary, to the mastoid region, though this was not required in the above cases, there being no mastoid disease. In similar cases I would not hesitate to perform the operation when the patient has no other chance of recovery. I think that this operation may also be performed in cases of septic meningitis following fracture of the base of the skull implicating the middle fossa.

With the concurrence of Dr M'Bride I would also make the following suggestion. When the presence of double optic neuritis, low pulse and temperature, associated with head symptoms in a case of ear disease, render the existence of a localized abscess probable, there can be no doubt as to the propriety of trephining, and with much probability of success. When, however, the patient has a high pulse and temperature, a septic absorption curve, and other signs of diffuse septic meningitis, it may still be justifiable to operate if the patient is rapidly sinking; it must, however, be remembered that observations by Griesinger, Schwartze, and others, show that sinus phlebitis may be recovered from. But in view of the rapid advances of cerebral surgery, we think that not one opening but two might be made, the one above the other, so that systematic irrigation might be carried out. We think also that a portion of the dura mater might be removed as well as bone, and thus brain pressure be relieved, and the arachnoid space washed out; for post-mortem examination has shown that in all cases of diffuse meningitis (arising from bone disease) there is septic pus in the arachnoid space, and it is not improbable that this is the source of the septic absorption which is the immediate cause of death.

IV.—ON HOLIDAYS. PRESIDENTIAL ADDRESS TO THE CARLISLE MEDICAL SOCIETY, 11TH NOVEMBER 1886.

By R. MACLAREN, M.D., Senior Surgeon to the Cumberland Infirmary.

(*Continued from page* 615.)

It is a great advantage if two men arrange to travel together; the same porter or mule can carry the luggage of both. They share the expense of driving, and in some circumstances one guide will suffice for two, while one man would require two guides for himself alone. Having provided all requisites, the next thing is to get a guide. Guides are the great difficulty of high mountaineering, from the high wages they expect. There are several ways of engaging them, but in any way they are costly. One way is simply to arrange for each excursion, not engaging a man for a fixed number of days; you then pay him according to a tariff. For the Matterhorn, for instance, you would have to pay him £4—that is, for a day and a half's work. Another way is to engage the guide for a fixed time—week, fortnight, month—giving him 7 or 8 francs a day for ordinary path walking or for wet days if the weather is bad, then 20 for snow passes, and 50 for peaks. Yet another way is to engage a man for 10 francs a day up to a certain height, say 13,600 feet, and bargain with him to go certain other higher places, which you fix on, at a given price generally somewhat lower than the tariff. The last is the most economical way, but guides will not always agree to this if it is a busy time. As to choosing a guide, if you know any one who is in the habit of going to the place from which you are climbing he can generally advise you as to the man to employ, otherwise it is best to trust the hotel-keeper. You will not always do well, but better than if you try to select for yourself. Beware of guides who waylay you and ask employment. As a rule, the guides are good fellows, quite trustworthy, and know their work well. They mostly speak English, and have a very fair education. They are all licensed by a committee appointed for the purpose in each district. Each has a book which you may require him to give you, and in which you may enter any report you choose; this, and the prospect of a "pourboire," which, though expected, you should not give unless you are pleased, are the guarantees you have for good behaviour.

Most high peaks are ascended in two days. On the first day you go from your hotel to a club hut. This means usually a four to six hours' walk, sometimes over a glacier and its moraines, sometimes up a steep rough mountain track. The club hut itself is a rude shed of stone, not always quite watertight, for the roof is made of the flattest stones at hand, and these may not be very flat. Each hut is provided with a wooden platform, which serves as a bed. Some have a stove; some an open hearth fireplace without any chimney, the smoke escaping through the crevices; some have loose hay to sleep on, others thin mattresses. They are all provided with rugs and cooking utensils. Generally the start is timed to reach a club hut a little before sundown. The guide prepares an evening meal—bread and butter with cold meat and coffee or chocolate, the latter the best—and everybody gets to bed as soon as possible. In a few situations, instead of a club hut you have an "auberge," not very much better; but there is this difference, that the hut has no resident keeper, while the auberge is a little inn. You have more choice of food and a little attendance. There are two such on the Theodule Pass, 10,899 feet above the sea-level, and there is the same at the Grand Mulets on the ascent to Mont Blanc, 10,000. The club hut brings you in height within 4000 to 5000 feet of the summit of your peak, and in time within four to six hours of it. From the club hut a start is made very early in the morning—2, 3, or 4. The top should be reached before 8 A.M., and the time of setting out is regulated to allow of this. The early start has many advantages. First, the snow is hard up to 8 A.M., which renders walking on it incomparably less fatiguing, and also much less dangerous, as the coverings of hidden crevasses are hard, and bear the weight of crossing. Then it is much easier walking in the cool morning air than under a midday sun; and, lastly, the views are finest in the morning before the sun has caused evaporation from the hills, to condense in cloud as the day goes on. It is usually soon after leaving the club hut that snow walking begins, and sometimes there is little else to the summit. It is at this stage that the rope comes into use. With most mountains, in addition to snow walking, there is a good deal of rock climbing, requiring the use of both hands and feet, and in a few instances the conditions are reversed, and there is much rock climbing and little snow walking. The descent is much quicker than the ascent, and generally you return to your hotel on the same day that the summit has been reached. For though on rock the descent is very slow, perhaps slower than ascent, on the snow you can rush down with giant strides, or accomplish in five minutes by glissading what takes an hour to toil up. Glissading, when you are sufficiently used to it to do it well, is delightful. You stand on the snow slope, lean well back on your pole, and let yourself go. You are soon at the bottom of the slope.

The snow-line in Switzerland is met with at 8000 to 8500 feet above the sea-level. Above this line the snow-fall throughout the year is in excess of the power of the sun to melt it. Below the line the melting power of the sun is sufficient to remove all the snow that falls. Above the line snow falls all the year round, summer and winter, yet its depth does not go on constantly increasing, because it is perpetually moving downwards on the higher peaks and steep slopes. It slides towards the plateau, from which the peaks rise, sometimes slowly, sometimes with a headlong rush called the avalanche. When it gets lower down, the ground is not so steep, and it accumulates. Snow under pressure becomes ice. Ice, again, has the property that it readily breaks up and readily reunites. It is, moreover, highly elastic. Consequently, the downward movement results in huge rivers of ice filling the bottoms of the upper valleys, and forming accumlations so vast that they are thrust down far beyond the snow-line, and are at last gradually melted away at their extremities, and are the sources of some of the largest rivers of Europe. These ice accumulations are known as glaciers. Their origin, movements, and history have long been subjects of great interest to scientific men. It is nearly one hundred years since methodical investigations of them were made. It seems now proved that their movements differ but little from that of water, except in speed. They move fastest at the centre and surface, slowest at the sides and bottom. It is owing to the properties of the ice above mentioned —its elasticity and its readiness in breaking up and reuniting— that a solid substance can really flow.

It is, as you have heard, over the glaciers and snow-slopes that the traveller makes his way in ascending the high peaks. Below the snow-line glacier walking is not difficult, as a rule, if you know the route; and even if you do not, a few general principles help you. The centre is the least crevassed. The concave side of the valley is less fissured than the convex; the steeper the glacier the wider are the crevasses. Most glaciers have, in some part of their course, a very steep descent, the ice-fall or serac, the latter name derived from a kind of crumbly cheese which used to be made about Chamounix. As it bends over the ice-fall, it is riven into ridges, pyramids, and blocks in the wildest confusion, and in some instances is here quite impassable, but even the ice-fall often looks worse than the reality proves when it is seriously tackled. Crevasses, I may say, are of all sizes, from a slit which will just admit a knife-blade to huge chasms which would engulph a regiment. They run directly or obliquely across the glacier. They are never very long. The average width is not great. As a rule they can be taken in the stride as you walk up or down. Sometimes you have to cut a few steps to save the time and fatigue of circumventing them. Except on the serac glacier, walking up to the snow-line does not require a rope. But the moment you get on snow the rope should be used. The snow-field lies smooth and unbroken, and conveys to the mind none of the aspects of danger. Here and there on the surface you see a faint depressed line, and your guide, if he thinks you unused to the work, will call out *crāvass* as a warning to you to take a long step over it, and keep the rope tight, for under that faint line is a crevasse of unusual breadth. Perhaps, after you are safely over, he will take his ice axe, push it through the snow, and show you the depths below.

For one such, which shows some sign on the surface, you probably pass over a score which do not, and nothing can be more treacherous than the snow-covering. It may be inches thick, or feet, you cannot tell on the surface. This is why morning walking is so much better than day walking. A few inches of frozen snow will carry you, while you will sink through a few feet of soft snow. No man, therefore, who sets the least value on his life goes on the snow unless roped; and there should be at least three tied together, the rope securely knotted round each. Two men can always hold one on snow, and it is almost impossible for more than one to break through at once. Only in the event of the party getting lengthwise on a hidden crevasse would more than one go in at a time, and, as they lie transversely to the ascent, this can rarely happen. A sudden drop through the snow crust into a crevasse is not a very usual thing in any case. It is no uncommon thing, however, to sink pretty well down in the snow choking the mouth of a crevasse. Instinctively you feel what you are doing, and involuntarily throw yourself rather forward, and scramble along generally without even a pull on the rope, hardly conscious that you have done more than make a false step. I have described how the snow slides down and becomes glacier. Where the upper end of this glacier touches the steep mountain slopes it often breaks away from the mountain side, leaving a yawning chasm between the glacier and the slope called a "bergschrund," sometimes almost forming a trench round a peak. This is often bridged with snow, and from its size is more difficult than the crevasse. On the snow the rope is a safeguard against accident, but in rock climbing it is of use to really assist you in getting on; that is to say, one of a party, usually the guide, can help you over a difficult bit by holding you with the rope. In rock climbing, the proper procedure is for one of a party to move at a time, while the others stand where they have good foothold.

I come now to the question of danger. Is there necessarily more danger in Alpine climbing than a man is justified in incurring when not called on by duty? A most competent authority puts the causes of accidents as follows:—1. Incompetent climbers; 2. Incompetent guides; 3. Foolhardiness; 4. Doing what the guides say should not be done; 5. Dislike to assistance; 6. Rotten rope; 7. Attempting mountains in bad weather; 8. Attempting them after snow, or too early or too late in the season; 9. Attempting from pride impossible places; 10. Rank carelessness. The above you will see are all preventable, but we now come to a series which are not entirely preventable—1. Avalanches; 2. Falling of rocks; 3. Falling of ice; 4. Breaking of snow under the feet, as over crevasses; 5. Breaking of rock under the feet; 6. Sudden bad weather; 7. Sudden illness.

The *Echo des Alpes* publishes an interesting statistical summary of the fatal accidents that have occurred since 1859 in climbing the

Swiss Alps. During this period there have been 80 such accidents, whereby 134 persons lost their lives. Of these, 40 were guides or porters, 80 tourists, 2 monks of Mount St Bernard, 11 were workmen journeying over the mountains, and 1 was a crystal-seeker. In 6 cases, 16 persons perished from exhaustion, cold, or some organic affection; in 14 accidents, 15 persons were killed by falling into crevasses, etc.; in 10 accidents, 15 persons were killed by slipping on ice; and in 35 cases, 41 persons were killed by slipping on rocks or grass; in 4 cases, 4 persons lost their lives by stones falling upon them; 27 lives were lost in 7 avalanche accidents; and in 4 cases, 16 persons perished by falling through frail ice or snow. From this it appears that accidents from slipping on rocks or grass are the most numerous; probably unsuitable boots are the most frequent cause. But in too many cases, imprudence or carelessness is the source of mischief. In 16 accidents, the climbers were not roped together; in 28, the tourists were alone, or unaccompanied by a guide; unfavourable weather caused 14 accidents; in 9 cases, the climbers were fastened together at spots where the fall of one would be sure to bring all down; and in 22 cases, complete ignorance of the condition of the snow was the main cause of accident.

Well, there is no doubt this is a heavy death-roll; but when you take into account the great number due to preventable causes,—I have seen it estimated as high as 9 to 1,—the risk run by any one who acts cautiously and wisely, and is fit for what he attempts, is a very small one indeed. I hold that the test of justifiable risk in sport is—will fitness, experience, and caution very materially diminish it? If the risk is one inherent in the sport itself—if it is like the bullet in battlefield, perfectly indiscriminating—if the man of experience and long practice runs the same chance of injury as a mere beginner, that is a sport for every prudent man to avoid. But such is not the case with Alpine climbing. Eight-ninths of the accidents are notoriously and confessedly avoidable, and even among those classed as not preventable, prudence can diminish the risk. For instance, avalanches are noted as unpreventable, yet a man who knows mountains has a good idea where avalanches are likely to fall, and avoids these places. So with falling of rocks and ice. Firm rocks or firm ice will not fall, and it is generally possible to form a fair idea of where they are not firm. But you may say, What about the risks of the learning stage? Here, again, prudence comes in; and if you are not experienced yourself, you take care to put yourself in the hands of experienced men, and moreover, have sufficient for the work. You get competent guides and trust them. For my own part, I have had no experience of danger. In none of my excursions have I been knowingly in any risk. Once only have I had even trouble. I had arranged to join a party at a club hut, where we were to spend the night, and then cross a snow pass the following day. In spite of warnings I delayed to start till rather late in the day for the sake of getting letters. A porter accompanied me, who was supposed to know the way. Evening overtook us about half-way across a glacier. The porter's knowledge of the route was very imperfect. I had, however, been over the same ground before, and was not much dependent on him. We certainly had a bad half-hour dodging crevasses in the deepening twilight. However, I was able to keep him in the right direction, and we got on to the moraine, where there was a path which we could feel with our feet. It was too dark to see, and this duly brought us to our hut.

Wherein lie the attractions of Alpine climbing? In many things, immediate and remote; in the satisfaction of having encountered difficulties and overcome them; in having undertaken arduous labour and accomplished it; in the weird beauty of the snow-clad peaks touched by the first rays of the rising sun, gilding them with a delicate and tender radiance which words and the painter's brush alike fail to convey; in the awesome bergschrund festooned with icicles like huge stalactites of alabaster, and hollowed into deep shadows and gruesome caverns; in the deep crevasse filled with a blue light of fairylike delicacy; in the dark-blue sky, the pure air, and the ice-cold water; in the awe-inspiring rushing of the avalanche; and remotely in the strengthened muscles and invigorated appetite, in the general feeling of body and mind fully fit for all work which their capacity allow; and, lastly, let me say, in the recollection of a comradeship closer than the absorbing labours and cares of everyday life allow, which not only shared every toil and every pleasure, but materially diminished the first, and formed no small portion of the last.

I cannot better conclude what I have to say on this head than by quoting to you the words of one of the most courageous, and at the same time one of the most cautious of Alpine climbers, Whymper. Speaking of mountaineering as "the purest, healthiest, and most manly of sports," he says:—"Often in grappling with everyday difficulties, sometimes in apparently hopeless tasks, encouragement has been found in the remembrance of hard won victories over stubborn Alps. We who go mountain-scrambling have constantly set before us the superiority of fixed purpose or perseverance to brute force. We know that each height, each step, must be gained by patient, laborious toil, and that wishing cannot take the place of working. We know the benefits of mutual aid, that many a difficulty must be encountered, and many an obstacle must be grappled with or turned; but we know that where there is a will there is a way, and we come back to our daily occupations better fitted to fight the battle of life and to overcome the impediments which obstruct our paths, strengthened and cheered by the recollection of past labours, and by the memories of victories gained in other fields." "We glory in the physical regeneration which is the product of our exertions; we exult over the grandeur of the scenes that are brought before our eyes, the splendours of sunrise and sunset, and the beauties of hill, dale, lake, wood, and waterfall; but we value more highly the development of manliness and the evolution under combat with difficulties of those noble qualities of human nature, courage, patience, endurance, and fortitude." "The recollections of past pleasures cannot be effaced. Even now, as I write, they crowd up before me. First comes an endless series of pictures, magnificent in form, effect, and colour. I see the great peaks with clouded tops, seeming to mount up for ever and ever. I hear the music of the distant birds, the peasant's jodel, and the solemn church bells, and I scent the fragrant breath of the pines; and after these have passed away another train of thought succeeds of those who have been upright, brave, and true, of kind hearts and bold deeds, and of courtesies received at stranger hands—trifles in themselves, but expressive of that goodwill towards men which is the essence of charity." And then, referring to his Matterhorn disaster: "Still the last sad memory hovers round, and sometimes drifts across like floating mist, cutting off sunshine and chilling the remembrance of happier times. There have been joys too great to be described in words, and there have been griefs upon which I have not dared to dwell; and with these in mind I say, Climb if you will, but remember that courage and strength are nought without prudence, and that a momentary negligence may destroy the happiness of a lifetime. Do nothing in haste, look well to each step, and from the beginning think what may be the end."

There is one holiday of which I have not had personal experience, but of which some notes have been placed in my hands.[1] It is so unique in its character that I will avail myself of these at some length. I allude to Tangier. Its great charm is the magnificent climate and the glimpses it affords of primitive Eastern life. The climate is singularly equable, seldom rising above 80° in summer, or falling below 50° in winter. It can be reached by taking steamer from London or Liverpool to Gibraltar. From the north the latter is the more convenient. The voyage takes about five days, and the return ticket costs £10. Tangier is four and a half hours from Gibraltar, and the fare is 8s.

Tangier rises in a semicircle from the head of its bay. The flat-roofed white-washed houses, the tall fort, and the towers of the minarets at once tell the traveller that he is in a new land, and has left Europe behind. The bay is crowded with large boats with negro crews and quaint lateen sails; long light-coloured pleasure boats, pulled by swarthy Arabs in white flannel suits and red caps, dart about on the sapphire water, and the scene is delightfully bright and sunny. The traveller who has breakfasted at an English hotel at Gibraltar finds himself almost at a step in the heart of the East. He is rowed ashore by a negro crew, each with a knife in his belt, and who talk and gesticulate in a fashion rather discomposing to ladies. As he leaves the landing-stage he passes through a room where there are three or four handsome, grave-faced Arabs in turbans and spotless robes, who are seated on divans. They look like Eastern princes, but are only Custom-House officers. The luggage is examined by the servants of the Custom-House, but this is a mere form, and is done with much courtesy.

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[1] By my brother James Maclaren, F.R.C.S.E., Medical Superintendent of the Stirling District Asylum.

As the traveller makes his way to his hotel he meets women muffled to the eyes shambling along in bright red slippers, and darting from the folds of their robe one sharp look at the strangers as they pass. A loud sharp cry of *valāk* falls on his ear, and a small and very active donkey with water barrels on each side, and a negro perched between them, pushes its way between him and the wall. A clatter of hoofs is heard, and a stately Arab on a richly caparisoned mule trots surely over the uneven street, with two half-naked negro runners panting after him. A tinkling bell is heard, and a swarthy, ragged water-carrier, with distended goat-skin bag resting on his hip, stalks by with long, swinging step. A loud hum, which somehow seems not unfamiliar, attracts his attention, and on looking into what seems a dark cellar there are seen twenty or thirty beautiful, large-eyed, olive-coloured children seated on the floor around a venerable, long-robed, white-bearded man, all swinging their bodies in unison and repeating at the top of their voices passages from the Koran. If the hour be sunset, a weird and awful cry is heard in the air, and goes sounding over the city. It is the native priest on the summit of the minaret calling the faithful to prayer.

Outside the south wall of the town is the market-place. This is always a picturesque sight. When crowded, as it is every European Sunday, every nationality and every grade under the sun seem to be represented in the great crowd. Wild hill tribes, desperate and determined looking, jostle English tourists sauntering idly about; Arabs perched on tall dromedaries, their long guns projecting high above their heads, tower above the crowd; fantastic negro mummers, deformed fakirs, serpent charmers; dreadful-looking women from Tetuan, with straw hats, high peaked, and with brims about two feet broad resting on their shoulders, and hiding horrible scarred faces; blind beggars; families camping on the roadside, with their sick and dying exposed to view; cruel-looking native soldiers, dapper Zouaves, men selling horses and mules, women selling grass and snails, weird native music, noise, heat, and odours,—these, and a hundred things besides, make up a scene, wild, picturesque, and memorable.

Among the sights of Tangier is the native fort and governor's palace, much fallen to decay, but its great size and fine arcades of pillars testify to its ancient grandeur. Here is the prison, a horrible place, where unhappy wretches are seen loaded with irons and stalled like beasts. The court of justice is hard by, where in a narrow cell the cadi lies prone on a mat exercising his office. He is a tall, dark, very handsome man, with a keen steely eye, His decisions are given with much abruptness, and his punishments are said to be very cruel. Flogging for minor offences, gouging out the eyes for theft, and torture for serious crimes.

The true charm of Tangier lies not so much, however, in its regulation sights as in the picturesqueness of its daily life, its glorious climate, and splendid scenery. The surrounding country is rich in fruit and flowers, and the views and walks are delightful. Living is cheap. Travellers are boarded in a first-class hotel for 10s. a day. Those who have visited Cairo and Alexandria and other towns, often remark that pure Eastern life is exhibited to greater perfection in Tangier than in any of the others, and this, remember, within about five days of where we are.

Gentlemen, I have now reached the limits I prescribed for myself in planning this address, and yet I feel that I have but glanced at the fringe of the subject. It has been said that in a promiscuous assembly of half a dozen people you could hardly get any two to agree as to which was the finest of our English lakes, and in the same way, I suppose, hardly more than two among us would be of one mind as to the best holiday; but if I have succeeded in the least in attracting any of you to fresh fields, if I have placed before you any information which will make it easier to diversify a toilsome life, or to give advice to others how to do so, my object will have been fully gained.

Part Second.

REVIEWS.

Pilocereus Senilis and other Papers. By WALTER MOXON, M.D., F.R.C.P., Physician to and Lecturer on Medicine at Guy's Hospital. London: Sampson Low, Marston, Searle, & Rivington: 1887.

UNDER this quaint and puzzling title we have collected a series of fugitive papers and lectures, now out of print, by the great thinker whose death was one of the many losses the medical side of Guy's has suffered lately.

Pilocereus Senilis—an oldman Cactus—must in some quaint familiar way have meant more to Walter Moxon than we with all our puzzling can make out; but certainly to the writer of this, that odd pantaloon of a flower will now carry friendly associations, for between the boards of this little unpretending volume we find evidence of a wealth of humour, originality, and deep-thinking sufficient, if diluted and made the most of, to set up in trade a round half-dozen of essayists.

Much of it is so concentrated, so subtle, as to be "caviare to the general," for it needs reading and re-reading; it needs you to put down the book and think—What does he mean by that? but he always means something, and says it well, and says it in such a brilliant style, that when you see it it gives light, and will remain in your memory. No wonder that in his own quaint way he felt and said that his sandwiches contained mustard between the bread and meat.

Happy Guy's men to have had a teacher who could make them think, and not merely cram them like Strasburg geese. Humorous, quaint, brilliant, thoughtful, we have tried to mark passages to quote, but we might copy out the little book in full.

"I wonder if Guy's motto, *dare quam accipere*, has any reference to the physic given there. No doubt it is not so good to have to *take* that as to give it. If you have any doubt, just taste a few bottles. You will find them over the beds in the wards," p. 8.

"Advice gratis. Three kinds. Sympathetic—Let me help you. Apathetic—Do as you like. Antipathetic—Get thee and hang thyself," pp. 11, 12.

"The Whole Truth on the part of the Plaintiff" is a most brilliant, plain spoken, and powerful essay on the treatment medical witnesses meet with at the hands of lawyers and judges.

"Knowledge is fuel, not fire," p. 80.

Classification of Disease.—"He cannot classify diseases, because what he knows of them is not comparable knowledge. For while one disease is a pain in the leg, and another a growth in the stomach, and another a spider in the skin, the classification of them is worse than mixing incompatible—it is mixing things indifferent. It is like trying to mix the solar spectrum and the key of C major with essence of peppermint," p. 89.

"I pity the lecturer on medicine; he is under the greatest of all burdens—the burden of the uncommunicable; and you are happy when he is one of those great men who can nearly say what cannot be said," p. 93.

"Without the doses three times a day, the service would not go on; they unite the attention of doctor, patient, nurse, and friend in a periodic series of efforts, something not unlike those little yells a group of sailors make in turn when they are hauling hard on a cable, without which it appears the cable would never come along, though there is no apparent force in the noises they make. A doctor without physic is like a priest without a creed, or a poet without rhyme," pp. 136–7.

"Knowledge is not power. Power arises by training in the use of knowledge. Consider the difference between training and teaching. The teacher carries over the things he knows, and fixes them in the learner's memory; the trainer takes what is in the memory, and converts it into an organ for the pupil's own use," p. 205.

Every teacher of medicine ought to read this book, to learn how to teach—every student, so that he may select a teacher; and every one who has read it once will wish to read it again; so every one should buy it, and put it on the shelf nearest the hand which holds the favourite books.

Handbook of Diseases of the Ear, for the Use of Students and Practitioners. By Urban Pritchard, M.D. (Edin.), F.R.C.S. (Eng.), Professor of Aural Surgery at King's College, London, etc., etc. With Illustrations. London: H. K. Lewis: 1886.

This is a practical manual, which will enable the student or practitioner to recognise the various pathological lesions of the ear, to diagnose the different diseases, and to discriminate in the matters of treatment and prognosis in a thoroughly practical, scientific, and sensible manner. In fact, it is just the book the earnest medical practitioner or student requires. The latter part of the chapter on the anatomy and physiology is a brief epitome of Dr Pritchard's own well-known researches on the inner ear, and is beautifully illustrated by several original drawings. The lithograph of an enlarged view of the left membrana tympani, as seen through the speculum, is very true and beautiful. It should be looked at more than once, and looked at through a speculum, when it will with pleasure and profit be frequently examined. The various methods of examining the ear, the diagnosis and treatment of its diseases and injuries, are briefly but clearly stated, and in the appendix we have a list of formulæ which, although almost general now in modern text-books as in some older works on the ear, is, we fear, of very doubtful utility. We strongly recommend Dr Pritchard's handbook.

On Tinnitus Aurium and its Treatment by Electricity. By Julius Althaus, M.D., M.R.C.P., Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park. London: Longmans & Co., Paternoster Row: 1887.

With some of the author's views of the pathology of tinnitus it would not be heretical to agree, but that electricity should cure all the forms of tinnitus he describes is rather too much. The little *brochure* is well worthy a perusal.

Official Year-Book of the Scientific and Learned Societies of Great Britain and Ireland: comprising Lists of the Papers read during 1886 *before Societies engaged in Fourteen Departments of Research; with the Names of their Authors, compiled from Official Sources.* Fourth Annual issue, 1886. London: Charles Griffin & Co.

This is an exceedingly well drawn up volume, with great accuracy, and indispensable to those engaged in scientific research, who may wish to know where to read their papers, and what papers have been read by others.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXVI.—MEETING V.

Wednesday, 2nd March 1887.—Prof. Grainger Stewart, *President, in the Chair.*

I. Election of Ordinary Member.

The following gentleman was elected an Ordinary Member of the Society:—John Keay, M.B., Mavisbank House, Polton.

II. Exhibition of Pathological Specimens.

1. *Mr A. G. Miller* showed a FOOT amputated for WHITE GANGRENE, and a DRAWING of the same done for him by Mr Caird. The gangrene was due to embolism of the tibial arteries, in the anterior so complete as to cause the dorsum of the foot to become suddenly quite anæmic, and exhibit the pearly whiteness which had been so well brought out in the drawing. Another point of interest was that the parts had been kept absolutely sweet for a period of two months, and when the limb was amputated the gangrenous portion was quite dry and mummified, and the skin at the white part transparent.

2. *Dr James Carmichael* exhibited the BRAIN OF A GIRL, aged 4, who had died in the Royal Hospital for Sick Children from meningitis. The convolutions, it would be noticed, were much flattened, and the lateral ventricles, which were distended with fluid, were considerably enlarged; the foramen of Monro was sufficiently large to admit the little finger. He would like to draw attention to the very unequal dilatation of the lateral ventricles, the left being roughly about twice as large as the

right. This condition was seen, although less marked, in the brain of a child which Dr Bruce had kindly shown to the Society for him at the last meeting. At the base would be seen the ordinary signs of meningitis, the pons and a portion of the under surface of the cerebellum being covered with a layer of fibrinous lymph, in which a few gray tubercular nodules were visible. There were also some tubercular nodules in the corpora striata. The membranes between the cerebellum and pons were closely adherent, and the foramen of Majendie apparently closed. Macroscopically no tubercle had been found in any other of the organs, but the mesenteric glands were enlarged and evidently tubercular. The child had been about five weeks under treatment, and the clinical features of the case generally were those of well-marked tubercular meningitis. Symptoms of paralysis and coma did not supervene till the end of a fortnight; previously the only head symptom was persistent vomiting. During the last twelve days the child had remained in a condition of general spastic rigidity, opisthotonic spasm being well marked for two or three days, but ultimately passing off.

III. Exhibition of Instrument.

Dr A. Bruce showed a new form of RADIAL MICROTOME.

IV. Original Communication.

Dr P. M'Bride and *Mr A. G. Miller* read a paper on THE DIAGNOSIS AND OPERATIVE TREATMENT OF CEREBRAL ABSCESS DUE TO EAR DISEASE, which appeared at page 996 of this Journal.

Prof. Annandale said it was well known that surgeons had for long been of opinion that when symptoms of suppuration in the mastoid cells occurred this bone should be laid open, but it was a more recent idea to deal with abscesses inside the skull. In regard to the symptoms of those intracranial abscesses, Dr M'Bride had very properly said that as yet they were scarcely in a position to decide between a pure limited abscess and a diffuse suppuration, and this made the question of operative treatment somewhat difficult. As to the implication of the sinuses, he thought they were now in a position to tell between thrombosis of the lateral and of the cavernous sinuses. In cases in which there was a limited or even a diffuse suppuration they were bound to interfere by operation when the symptoms became serious. Where there was in addition thrombosis, the case became more difficult; but if the symptoms of suppuration were well marked, he should still be inclined to operate, as the thrombosis might be recovered from. In regard to the seat of operation, he thought Dr M'Bride had made a distinct advance in advising the operation he did in connexion with the roof of the tympanum. There was no doubt that this was the situation which was perhaps the most common for intracranial abscess. The roof of the tympanum was very thin, and he believed there was frequently an actual communication between the dura mater and the tympanum through it. This probably was the explanation why suppuration was present at this particular part, and it was a reason why an operation should be done there.

Prof. Greenfield explained that his reasons for the diagnosis he had arrived at in his case were not discussed, because the editor had written urging him to cut it down, and this he had to do to secure its early publication. These reasons he had fully discussed in a clinical lecture to his class, and Dr M'Bride had given in brief some of the mental processes by which the diagnosis was arrived at. The case was one of greater difficulty than might be surmised from Dr M'Bride's statement of it. There was no history of ear disease and no discharge from the ear when the patient was admitted. The diagnosis was arrived at mainly by exclusion of other possible contingencies after the conclusion was come to that the condition was probably cerebral. Discharge did not appear from the ear till the fifth day after admission. Dr M'Bride saw the case two days after this, when the diagnosis had been made, and he did not seem to quite appreciate the difficulties there had been in arriving at it before this discharge occurred. The special points to which Dr M'Bride had referred were the symptoms of nerve-pressure and the size of the abscess. He did not point out that this grouping of symptoms was exceptional—so much so, that he (Dr G.) had not been able to find any other case in which the same grouping had occurred. There was a certain number of cases in which there was a communication between the ear disease and the abscess; but there were others in which healthy brain substance intervened, and the abscess was at a distance from the ear. This being so, the case was an exceptional one, and the abscess had extended forwards, and had involved the dura by the side of the sella turcica, and there implicated the optic and third nerves. This part of the diagnosis was open to abundant criticism. The case was one in which one had to go on the summation of probabilities. He was greatly guided by the close parallelism of cases previously seen. Then when evidence of ear disease came, the general condition of the patient and the emaciation, together with the other symptoms, led him to the conclusion that the case was one of cerebral abscess. He fully agreed that the abscess would probably have been reached by operating in the position recommended by Dr M'Bride and Mr Miller. The shortness of the time at their disposal prevented their having the advantage of Dr M'Bride's presence at the operation, and Mr Caird was good enough to do it at half an hour's notice. Having made the diagnosis, he left it to Mr Caird to fix the seat of operation. The operation suggested by Dr M'Bride had been performed by Mr Miller for cases in which there was a different condition of affairs. He was inclined to think that surgeons should see that there was a free exit for discharge in such cases, either by incising the tympanum, or by opening the mastoid antrum and thoroughly disinfecting the sinus open by irrigation. He did not purpose discussing the diagnosis of cerebral from cerebellar abscess, but he thought the statistics brought forward by Dr M'Bride were dangerous to rely upon. In the majority of cerebellar abscesses he had seen there had been disease of the middle ear, with no evidence of disease of the labyrinth. The involvement of the labyrinth was, he thought, a sort of accident. Although he was inclined to concur in the view that the best position for operation was that selected by Mr Miller, he held that a comparison of skulls, particularly of children, showed that the point he gave would in some instances be too low.

Dr Byrom Bramwell desired, like the previous speakers, to express his admiration for Dr M'Bride's paper; it was, he thought, a truly scientific contribution to medicine, and likely to prove of real practical value. In his experience, cases of cerebral abscess the result of ear disease were rarely met with post-mortem. During the five years that he had acted as pathologist in the Newcastle Infirmary, he had not met with a single case; and during the three years that he has served in the same capacity in the Edinburgh Royal Infirmary, he had only met with two cases. The total number of post-mortem examinations during eight years' work in Newcastle and Edinburgh was at least 900. In consequence of the limited number of cases met with, it was very difficult for any single individual to draw any satisfactory conclusions from his individual experience. In private practice he had met with several cases in which cerebral abscess seemed to be present as the result of ear disease; in two of these cases, the diagnosis had been confirmed on post-mortem examination. In all four cases of cerebral abscess, the result of ear disease, which he had examined post-mortem, the abscess was situated in the temporo-sphenoidal lobe; in one of the cases, there was in addition an abscess in the frontal lobe and also in the cerebellum; in two of the four cases, the abscess in the temporo-sphenoidal lobe communicated directly with the tympanum. In two cases there was, in addition to the cerebral abscess, recent diffused purulent meningitis. (He had also met with one case of diffuse purulent meningitis in the Edinburgh Royal Infirmary, in which there was disease of the middle ear and perforation of the membrana tympani. Whether the meningitis in that case resulted from the ear disease or not was uncertain; in that case there was no abscess in the brain or cerebellum). It seemed to him that in looking at cerebral abscess from a clinical point of view, it was advisable to draw a distinction between those cases, on the one hand, in which there was an encapsuled abscess, and those cases, on the other, in which the abscess was diffused, or in which an encapsuled abscess was complicated with cerebritis, diffuse meningitis, or sinus phlebitis. The symptoms were quite different in the two groups of cases.

An encapsuled abscess, which was not associated with cerebritis or diffuse meningitis, might be regarded as an intracranial tumour. Cases were infinitely rare in which an encapsuled abscess was present without ear disease or nose disease, or other obvious disease of the cranial bones. In most cases of this description, it would probably be impossible, certainly extremely difficult, to make the differential diagnosis—meaning by a diagnosis a logical conclusion based upon definite facts—between an encapsuled abscess and some forms of cerebral tumour, more especially syphilitic tumours in regions which were not motor. When, however, there was ear disease—say a perforation of the membrana tympani—or other disease of the cranial bones, then the differential diagnosis between cerebral tumour and encapsuled abscess became relatively easy. It was, of course, theoretically possible to have an otorrhœa and a cerebral tumour existing in the same case; but when an otorrhœa—an obvious source of cerebral abscess—was present, the probability in favour of an abscess rather than tumour became enormously magnified. It was, however, often very difficult when cerebral symptoms were associated with otorrhœa to determine whether the symptoms were indicative of the presence of a cerebral abscess or not. In one of his cases the symptoms were those of hysteria, and the case was thought to be merely hysteria with ear disease. That hysterical symptoms should be prominent in some cases of cerebral abscess was quite what we might expect, for, as Dr A. Hughes Bennett had shown, and as he himself had in some cases seen, hysterical symptoms were sometimes the only or the most prominent symptoms in cases of cerebral tumour. Pyæmia and lead poisoning were conditions which also had to be taken into account, and which should be excluded before a diagnosis of cerebral abscess or tumour was arrived at. Another difficulty in diagnosis was due to the fact that well-marked cerebral symptoms might result from reflex peripheral irritation in ear disease. He had himself seen headache, vomiting, and convulsions produced in this way. The condition of the optic discs was, he thought, of great importance in distinguishing these two groups of cases; for if optic neuritis was present, the cerebral symptoms were obviously due to intracranial changes, and not merely to the peripheral irritation of ear disease. He could not, however, agree with Dr Miller, that the presence of optic neuritis in cases of ear disease with cerebral symptoms necessarily showed that the case would run on to a fatal termination, for he had himself recorded a case in which headache, vomiting, double optic neuritis, with a marked fall in pulse and temperature—symptoms highly suggestive of a cerebral abscess—were associated with, and had without doubt resulted from ear disease (with otorrhœa), and in which, under large doses of iodide of potassium, complete cure had resulted.[1] This was, however, quite an exceptional case, and he was inclined to agree with Dr Miller that the presence of optic neuritis in cases of this description was strongly in favour of operative procedure when there were localizing symptoms. Another point which Dr Miller had referred to was the effect which arrest of the ear discharge was likely to have upon the cerebral symptoms in those cases in which the otorrhœa was associated with cerebral abscess. In one of his cases, a girl died at the age of 18 as the result of the bursting of an abscess of the temporo-sphenoidal lobe, and the production of diffuse purulent meningitis. The otorrhœa, with which the abscess was associated, dated from an attack of scarlet fever in childhood; the abscess was a very large one, and its walls were so dense and thick, that he himself and others (the specimen was shown to the Northumberland and Durham Medical Society) were of opinion that it must have existed for a very long time. In that case it was noted on several occasions that when the ear discharge temporarily ceased, the patient suffered from headache and vomiting. In that case a direct communication existed between the cavity of the tympanum and the cavity of the abscess; and it seemed reasonable to suppose that the arrest of the discharge from the ear and the consequent increased tension in the sac of the abscess were the cause of the cerebral symptoms, which disappeared when the discharge again got vent. Another interesting symptom in this case was the fact that the patient could not remember two things at the same time; on several occasions she was sent to do messages in the town, and her friends remarked that if she was told to do two things, she forgot to do one of them. He would not go into the symptomatology of those cases in which a cerebral abscess was complicated with cerebritis, diffuse meningitis, or sinus phlebitis; Dr M'Bride had in his paper considered the differential diagnosis of these conditions, and had also detailed the chief points of distinction between cerebral and cerebellar abscess. Nor would he refer to the question of the site for operation? He thought that if the observations of Dr M'Bride—that the skull sounds were absent in cerebellar abscess, but present in cerebral abscess—was proved by subsequent observations to be a fact, it would be a valuable help to differential diagnosis. He would also suggest that in cases of suspected abscess of the left temporo-sphenoidal lobe, "word-deafness" should be looked for; a lesion in this part of the brain might be expected to give rise to this symptom, which, if present, would be of importance, both as indicating the presence of an abscess as distinct from meningitis, and as a guide to the position of the abscess, and therefore to the place for operation.

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[1] *Edinburgh Medical Journal*, August 1879, page 144.

Mr Caird, in reference to the seat of operation, said the case was presented to him as follows:—A patient supposed to be suffering from abscess in the temporo-sphenoidal lobe, the indications being in favour of the anterior part of the lobe being affected, and there was further a discharge from the ear. There was, however, no evidence that there was any direct communication between the diseased ear and the abscess. It might be of the nature of so-called sympathetic abscess, or of an embolic character. To get at the part where the abscess lay the seat chosen was the most convenient. The one vessel in danger was the posterior branch of the meningeal, and even if it were injured, it was completely under control. In a case of psoas abscess, even with lumbar curvature, we did not always make a posterior opening; but if there was no fluctuation or fulness behind, we opened in front where the abscess pointed. So also in the present case. There was much to be said in favour of the surgical principle enunciated in making the posterior opening, namely, at the seat of the disease; and the fact remained that lotion injected at the ear escaped from the trephine wound after operating. Still the condition of the bulging dura, the ready access obtained to the pus, and the satisfactory progress of the case, fully justified perforation at the spot selected.

Prof. Chiene said the optic neuritis and paralysis of the third nerve had not been emphasized sufficiently as suggesting in Prof. Greenfield's case that the temporo-sphenoidal lobe was affected. He had advised the incision adopted on the ground that the pus would gravitate forwards and downwards.

Dr Hughes Bennett, in response to a call from the President, said that the subject of cerebral abscess associated with ear disease was one of which he had little experience, as such cases in London seemed almost entirely to gravitate into the hands of the aurist. The treatment, however, adopted in the paper brought before the Society this evening illustrated the improved methods of dealing with intracranial disease, which had so greatly developed during quite recent times. On the general question of cerebral surgery, the first point of interest and practical importance was the fact which recent observation and experience had demonstrated, namely, that we must abandon our former "noli me tangere" notions concerning the brain. It had now been abundantly proved, first, by direct experiment on animals, and later by operation on the human subject, that this organ might be manipulated, and portions of its substance removed without any necessary danger to life. This fact having once been established, the idea suggested itself that it might be utilized for the removal of disease, which anticipation has since been amply fulfilled. Dr Bennett had, during the last year or two, witnessed many such operations, and the only one of these attended with a fatal result was the first, which was under his own care, and this, he believed, was due entirely to the very precautions which were then taken to secure safety, which precautions subsequent experience showed to be not only unnecessary, but actually injurious. He had seen cases where tumours as large as a hen's egg had been removed from the cerebral substance, requiring considerable manipulation of the brain, and leaving a cavity of great size. Yet those patients recovered their healths, preserved their intellects, and possessed fairly useful limbs. He believed that hitherto surgeons had been too timid in undertaking operations upon the brain, which, he considered, under suitable precautions, could be carried out with much less danger than was formerly supposed. If this was more generally recognised, it was probable that relief could be afforded to many other morbid conditions other than abscess or tumour. For example, he had recently seen cases of epilepsy in which the attacks had completely and permanently ceased after trephining the skull and removing the dura mater, which he supposed was to be explained by the relief from pressure thus afforded to the cerebral substance. In the same way, surgical treatment might be utilized for the removal of blood-clots, indurations, and other morbid products. Assuming such mechanical manipulation of the brain by the surgeon to be reasonably safe, the difficulty in dealing with all these cases was the accurate diagnosis of the disease, the responsibility of which usually fell on the shoulders of the physician. The problem to be solved lay not only in the localization, but in the exact definition and limitation of the lesion. They might be tolerably certain that a special portion of the cerebral substance was the seat of disease, but it would not always be so easy accurately to define its extent and limit, or to assert how much it involved neighbouring parts. These matters were obviously of great importance when considering the question of operation. Although the recent revelations of science had done much to illuminate all these difficulties, this much remained yet to be learnt, but doubtless as their knowledge advanced they will obtain greater accuracy, both as to the localization and limitation of disease in the brain. This, combined with improved methods of surgical treatment, should enable them in the future to afford relief to a wider and more varied extent than is now attempted.

Dr M'Bride in his reply said that cases of cure of thrombosis had been recorded by Griesinger, Schwartze, and others. These were cases in which the patient died from some other affection, and an examination showed that there had been thrombosis of the lateral sinus which had not proved fatal. With Mr Annandale's suggestion as to the opening of the mastoid antrum he concurred. Personally, he preferred to leave the tympanic membrane alone in acute cases in which the ear affection was not a complication of one of the exanthemata, until the pain had lasted for some time or the symptoms became serious. The cavity was practically aseptic, and the incision let in germs. It was very rare for acute cases to produce harm; it was the chronic form that was dangerous. He regretted that Prof. Greenfield had had to cut down his paper to such an extent as to prevent his giving reasons for the diagnosis arrived at. So far as could be made out from his remarks, his diagnosis would appear to have been a sort of intuitive result of comparison with other cases; and yet, if the speaker mistook not, Prof. Greenfield had stated that the combination of symptoms in this case was one of great rarity. The grounds for the diagnosis of these cases were of vital importance to patients suffering from such conditions. He was surprised to find that he was supposed to have held the belief that the case might be one of meningitis; he had arrived at the diagnosis of abscess almost immediately he saw the case. The ear discharge, the paralysis of the third nerve, and the optic neuritis showed that there was an intracranial lesion. The normal pulse and subnormal temperature made him conclude that it was probably an abscess, and that it was in front of the tentorium because of the pressure on the third nerve. He localized it in the temporo-sphenoidal lobe, because he knew that this was the most common seat of such abscesses; and he further ventured to suggest, that it would probably be found to communicate with the tympanum.

Prof. Greenfield said he had done all that before there appeared any ear discharge.

Dr M'Bride further remarked that he did not think that Prof. Greenfield had replied to his criticism of the seat of operation. He repeated that if the abscess had contained one instead of two ounces of pus, it would not have been reached by the opening made. Prof. Chiene told them that the pressure on the third nerve indicated that the abscess had passed forwards. He thought it rather showed that the abscess passed inwards. The question of word-deafness on which Dr Bramwell had touched was a very interesting one. He could not recall a case of otitic abscess associated with this symptom, though he believed the left temporo-sphenoidal lobe was the part of the brain most commonly affected. Of course it must also be remembered that ordinary deafness was invariably present in those cases to some extent, and that it was sometimes very marked.

Mr Miller also replied.

THE GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SECOND SESSION.—SEVENTH MEETING.

Mr C. W. F. Smith, Halifax, and Dr David N. Knox, were duly admitted to the Fellowship.

Dr P. Caldwell Smith, of Motherwell, showed a PLACENTA illustrative of apoplexy of that organ. He said that Mrs B., æt. 42, had a child at full time in 1881. In August 1885 she had a premature birth at 5½ months, the placenta showing extensive fatty degeneration. The recovery was complete. In March of this year she was again seized with labour prematurely, viz., at the 6½ month. When called he found she had fainted, and it was evident severe blood loss had taken place, but there was no external manifestation of it. There had been a large escape of watery fluid, which the lady thought due to the usual escape of amniotic fluid, but on examination the membranes were found to be entire. The placenta was expelled about five minutes after the fœtus, and after it several clots as large as itself were expelled. Placenta was only healthy in about one-third of its area, the rest showing large hæmorrhages into its stroma, these being of recent date. The lady died in five days of uremia following an acute attack of Bright's disease. He considered the ante-partum fluid discharge to have been due to compression of the blood-clots between the uterine and placental surfaces. There had been no œdema of any part nor any arterial tension, but the pulse ranged from 130 to 140.

Cæsarean Section.

The discussion on Mr Nairne's paper on this subject was opened by *Mr Thomas F. Gilmour*, who said that he thought the language of the paper was too hot, too sweeping, and too hortatory. It was intemperate, and therefore unscientific, to use such phrases as "to kill a child by selection," "improved system of hanging," or "infernal murderous operations;" or again, "I speak out for the child, and shall never be a willing partner to such slaughter." The poetry and the digression on statistical fallacies, and the reflexions and resolves, were in a Carlylelesian vein, and scarcely called for on such a subject to such an audience. This was a matter in which Lawson Tait was a great sinner, and disciples usually found it easier to imitate the vices of their leaders than their excellencies. It led to heat and friction, and these always hindered scientific progress, and sometimes diverted its course entirely. He thought that if there was one operation in obstetric practice which illustrated and proved the hippocratic aphorism that "the occasion is fleeting, experience fallacious, and judgment difficult," it was the Cæsarean section; for, in spite of its great antiquity, and in spite of the fact that parturition is the only constant and essential medical incident of all generations and all states of civilisation—for if things subsisted births must proceed—we have a long and interesting list of quotations and judgments nearly all against the operation, given by Mr Nairne himself, from men who had had experience of it, and whose judgment we are bound to respect. These men could not have turned thankfully to craniotomy without good reason; they must have chosen it as the least of inevitable evils after being brought face to face with the alternative; and while any of us might choose a different procedure, we *dare* not, he contended, claim that our so doing was from a higher or nobler motive. Cæsarean section, like other operative procedures, must be justified or condemned by the results obtained. Albeit he admitted that an operation to supersede craniotomy was required, though it would be still better if we could supersede the necessity for it by forbidding or preventing such pregnancies as must end that way. This would be the true remedy. People were not allowed to hawk laces, to sweep chimneys, to drive a cab, or carry luggage, or navigate a ferry boat, without being examined as to their fitness, and licensed as a proof of their fitness, and he maintained that examination and license to marry would be a prudent thing in every civilized State, and that it was a part of the duty of medical men to advocate such action by the State. But, taking things as they are, and until they become better, he thought that where a living child cannot be born *per vias naturales*, much can be said in favour of opening the mother's abdomen instead of the child's head. Though it was questionable whether in such cases the child was likely to be a valuable addition to the community. The laws of heredity forbid it. Figs were not gathered of thistles, and we were not likely to get well-formed or prudent children from badly formed and specially foolish or imprudent parents. He thought Mr Nairne rash in saying he would never again perform craniotomy. All the same he admired him for taking a clear and resolute view of his duty, and acting up to it. He thought Porro's operation superior, as it insured the patient's sterility in future. No operation is complete or commendable which leaves the patients liable to the same dangers again and again. There are cases on record, for instance, where the Cæsarean section has been performed on the same patient four times. It is thus a form of meddlesome midwifery: if we meddle at all it should be once and for all. Regarding the case of Mrs W., he thought it could hardly be profitably discussed in the absence of full details of diagnosis, operation, and after treatment, and especially of an autopsy. There could be no doubt, however, but that the death was due to preventible causes, and he humbly ventured to think that chief among these was the performance of Cæsarean section. A person who, however deformed, had passed safely through the ordeal of pregnancy eight times already, who had reached the age of forty years, and was unlikely again ever to trouble the obstetric physician, and who was first seen at or during the 7th month, would have been best left to complete her generative history by methods which her previous experience had sanctioned. In conclusion, and referring to the position of the fœtus, he said he only knew of one position of the unborn fœtus which could ever become a determining factor in the choice of an operation, and that was its being extrauterine.

Dr Murdoch Cameron thought it was quite possible to deliver *per vias naturales* with a conjugate diameter of even less than 2 inches, and therefore that an attempt should have been made to deliver Mrs W. by means of podalic version and forceps, and failing them, craniotomy. The life of an infant unborn was not to be put into the same scale with that of the mother.

Dr W. L. Reid thought all were agreed as to the advisability of avoiding Cæsarean section if possible. Craniotomy was a safe operation for the mother in all cases, except those whose pelvic conjugate was only 1½ inch or under. He would prefer Porro's operation to the Cæsarean if a favourable case presented itself.

Dr Oliphant referred to the advantages of section of the pubic rami as advocated by Dr M'Ewen.

Dr J. K. Kelly thought these operations were rarely, if ever, required, and that the long straight forceps (Glasgow pattern) could effect delivery in cases where ordinary craniotomy was performed. Failing this, he was inclined to favour Dr M'Ewen's operation of section of the pubic rami.

Dr N. Stark wanted to know why exact measurements were not taken, and apprehended that there was a disparity of observation between the medical men. He thought a mistake had been committed in performing Cæsarean section in Mrs W.'s case. He criticised the after-treatment, and thought the nurse had had too great discretion left to her.

Dr J. Adams said that, after the sweeping condemnation which had been passed by previous speakers upon this operation, he felt inclined, like Shylock, to rise and admit, "with bated breath and whispering humbleness," that he had performed Cæsarean section at any time. He thought the thanks of the Society were undoubtedly due to Mr Nairne for introducing the subject to their attention, though probably his views would have had more weight had they been put forward in a less hysterical style. Possibly previous speakers had spent too much time in dissecting his composition and his case, and so he would confine his attention to the Cæsarean section, and drop personal considerations. It might be well that he should first give an outline of the case he himself had operated on just three years ago. The patient was a dwarf, 4 feet in height, aged 23, and married about seven months. Her physician, Dr Grieve, had only seen her for the first time after she had been twelve hours in labour. She had lateral and posterior spinal curvature, and some three years previous to her marriage Dr M'Ewen had operated on both her legs for knock-knee. No os uteri nor presentation could be made out, and the finger could hardly pass between the sacral promontory and the pubis. In fact, the available space was barely 1 inch. She was put under chloroform at 7.30 P.M.; her abdomen was carefully washed with a 1 to 20 solution of carbolic acid, and he proceeded to operate, with the assistance of Drs Grieve and Robert Miller, and his brother Dr Frederick Adams. An incision was made from the umbilicus to a point 1½ inch above the pubis. This had subsequently to be continued upwards about 2 inches, and to the left of the navel. All bleeding points were easily controlled, and the peritoneal cavity opened without difficulty. Warm moist towels were now placed around the wound and over the uterus, which came bodily into view, having no bowel in front of it. A bold vertical incision was now made into the uterus, and the blood, which escaped in considerable quantity, was rapidly removed by sponges, while the assistants kept the abdominal parietes in close contact with the uterine surface. The placenta was adherent to the anterior uterine wall, and was rapidly detached and removed, and the child, which lay in first cephalic position, was grasped by the breech and extracted. The uterine wound closed firmly round the neck of the child and delayed complete delivery. After all vestiges of the membranes and liquor amnii had been removed, the os was found dilated to size of a half-crown piece. Prior to administration of chloroform, one fluid drachm of the liquor ergotæ had been administered in whisky, and so the uterus remained in the pelvis contracted like a cricket-ball. There was no threatening of hæmorrhage. No sutures were used, and no drainage-tube—as I thought the first would not hold, and the latter would act more as a plug than a drain, owing to its liability to get blocked by a clot. The abdominal wound was closed all but an inch at the bottom by chromic acid catgut. Protective with gauze dressings were applied. A binder of flannel was also wrapped round the trunk. She came rapidly and easily out of the chloroform, and lay quite happy watching her little one, which was placed near her, and whose presence caused her much joy. Her voice was strong, her pulse was good, and she was very anxious to obtain solid food. This condition continued till 11.15 P.M., when she suddenly died. The uterus had never relaxed its contracted condition, and post-mortem no blood was found in the abdominal cavity. There had been but little discharge per vaginam, and only slight blood-clot in the uterine cavity. No examination of the head and thorax was permitted. Dr Cameron had overlooked the important fact that the question of safety of an operation is largely affected by the experience of the operator, and thus he felt that embryotomy was quite as dangerous in the hands of an unskilled obstetric surgeon in very contracted pelves as the Cæsarean section. Evisceration was a long, tedious operation, fatiguing to the surgeon and most exhausting to the mother, and this latter fact largely affects her chances of recovery. The certainty of septic conditions arising from bruising, wounding, or lacerating the vaginal passages was considerable. Dr Stark had indicated his preference for Porro's operation; but to those who have had any experience of abdominal surgery, or who have dissected the pregnant uterus at full time, it will be apparent that to talk of applying a clamp round the cervix and remove the uterus is easier said than done. Apart from the difficulty of dealing with the very much enlarged broad ligaments, the size of the stump would leave great opportunities for hæmorrhage and septic infection. In the event of Cæsarean section becoming more successful with greater attention to points of detail, the ovaries could be removed at a later period without much danger. He therefore objected to Porro on account of the large raw vascular surface left, and on account of the shock involved in removing important organs like the uterus and ovaries. He believed that with the experience of many cases and many operators the Cæsarean section would have a much more successful issue in future, and he begged to indicate the following important points to be borne in mind in dealing with it. The incision should be kept to the vicinity of the fundus, as dissection plainly shows that at the cervix the bloodvessels are large and numerous, and there is a circular ring of muscle, which would keep the wound gaping, and tear through stitches if they were employed. He saw no cause to regret not having used stitches in the case narrated, but in another case he would certainly follow the plan indicated by Dr Samuel Sloan, and put a large number of stitches in the wound. To be effective they should be in three sets, viz., one through mucous membrane, one through muscular tissue, and one, most important, a large number through the peritoneal edges. These edges should be slightly inverted to insure adherence to the cut surface opposite. There is little fear of septic matter travelling *viâ* mucous membrane or muscle tissue, but the entrance of the lochia into the peritoneum was much to be dreaded. In regard to the relative value of the two lives, he thought that few would take Mr Nairne's view that they were exactly equal, and he must admit that the mother demands the chief consideration; but, on the other hand, he could not agree altogether with Dr Gilmour's contention that a child of rickety parents is, *per se,* probably a useless life, and better never to reach maturity, and that this is another argument in favour of embryotomy. Many of our greatest men have been deformed, rickety, or crippled, and yet have done vast good to the human race.

Dr Robert Pollok said that he had seen the case of Mrs W. for the first time when called to assist at the operation. It was not to be gainsaid that the operation was called for in some cases, but its overwhelming danger was not to be overlooked. We can't throw to the winds all the wisdom of our teachers. He turned Longfellow's verse against Mr Nairne, as it was the patient in this case who bled, etc. He criticised the absence of exact measurements. It might be regarded as certain, however, that the conjugate was 2½ inches; and that being so, he thought premature labour could easily have been brought on at the seventh month with safety to the mother and infant. He thought there was great disparity betwixt the value of the respective lives of the mother and infant.

Dr Richmond asked if it had not occurred to Mr Nairne to induce labour at the seventh month.

Mr Skene Keith remarked that he did not think it was a matter of great importance what the exact diameters were in the case of Mrs W. She wanted to have a live child, and he did not see why an attempt should not have been made to gratify her wish. Thought a great deal depended upon the operator. With reference to Mr Nairne's tabulated summary, he thought the first proportion was too exclusive, as elytrolaparotomy offered an alternative to the section, and was preferable to a Porro. In elytrolaparotomy there was no injury to the peritoneum, and there was not an ordinary stump, as the incision went down through the broad ligament. Neither would he go so far as the second proposition. In doubtfully bad cases he would prefer craniotomy, as the mother was our first consideration. The third proposition was too dogmatic; and as to the fourth, if we knew that a viable child was not capable of being born, it was needless to use the long forceps. The operation was quite justifiable in suitable cases.

Dr Marshall, Coatbridge, thought Mr Nairne had done a good service in raising this question, though he might have done better had it been on another case. He could not sympathize with him in leaving the case till the ninth month. Premature labour should certainly have been induced when the patient first came under notice. He wondered also why, when he did decide to operate, that elytrolaparotomy had not occurred to him. Full weight should be given to the lessons of statistics, and he did not think there could be any comparison between the value of the life of a mother and a child, especially one yet unborn.

Dr Malcolm Black narrated a case where Dr George Buchanan had been the operator. The conjugate osseous measurement was 2¼ inches. The patient was in good general health, not exhausted in any way, and no attempt had been made to deliver her by forceps. At the post-mortem, blood was found in the abdomen, and the stitches had given way in the uterine wound. He criticised the essayist's views about craniotomy and the amount of danger accruing from it to the mother, and repudiated them. He also questioned the wisdom of the advice given to Mrs W. at the beginning. For stitching the uterine wound he advocated silk sutures, boiled first in solution of the perchloride of mercury.

Dr Park stated that he should not have sanctioned the Cæsarean section in Mrs W.'s case had the pregnancy not been so far advanced (8½ months) when he first saw her. The facts also that the presentation was cross, and the cephalic extremity lying in the right or narrower side of the pelvis, and that the amniotic fluid was scanty, weighed with him. He pointed out, in answer to Dr Gilmour, that any attempt to have turned would have involved a complete version and transposition of the fœtal head to the left side of the pelvis, the only side through which it might have been conceived possible to drag the head. Doubtless it would have been easy to perform podalic version, but it would have landed the accoucheur in tremendous difficulty with the aftercoming head. If the case had presented itself to him at the seventh month, he certainly thought he would have induced premature labour; but, as the woman wished to have a living child, he sympathized with Mr Nairne in his ambition to gratify this longing. He had found, by reference to *Neale's Digest*, that many cases of recovery after Cæsarean section had been reported, some where the patients had operated on themselves. There was nothing, therefore, inherent in the operation itself to make it unsuccessful. Mr Nairne had omitted to state that the patient had had a hypodermic injection of morphia prior to being placed under chloroform, and that she had thus been enabled to do with less chloroform, and had obtained a prolonged and beneficent sleep after the operation. Indeed, she continued in a most favourable condition till the morning of the third day, when she had an enema for the purpose of inducing action of the bowels. As it did not operate, the nurse took it upon herself to repeat the injection to the extent of two pints, all of which was retained, and gave rise to considerable distress. In addition she had passed that night without either draught or hypodermic injection. Dr Park tried to relieve the abdominal distension, and to draw off some of the imprisoned enema by means of the Obeirne's tube passed about twenty inches up into the colon, but without effect, only an ounce or two of fluid coming through. In fact, obstruction of the bowels was the first beginning of trouble, but it was rapidly followed, if not preceded, by peritonitis, which ran an acute course until death ensued. With reference to this complication, he referred to the very full and exhaustive consideration it had received from the German Gynæcological Society, as reported in their *Transactions*, and reviewed in the current number of the *International Journal of the Medical Sciences.*

The President expressed his admiration of Dr Nairne's paper, none the less heartily that he differed entirely from the conclusions Dr Nairne had felt it right to come to. The language of the paper did not certainly partake of the utterance of the "still, small voice" which Dr Gilmour would have preferred; but he felt that the style adopted by Dr Nairne was justified as an expression of his own strong feelings. The pathos of the sentence, "She saw her baby and was glad," was very touching. He objected, however, to the argument of the essayist, namely, that because the life of the child was valuable, we were bound, in order to save it, to perform such an operation on the mother as would almost certainly kill her. No husband and father would for a moment consent to have the life of the wife and mother treated as no more precious than that of the unborn babe. He confessed himself, however, as very anxious to get rid of so horrible an operation as craniotomy; but he thought if the blame of this operation rested on any one, it was more on the surgeon than on the gynæcologist, for as soon as the former could show even a very few successful cases in Glasgow, the latter would most gladly lay aside the perforator. He would advise, especially in view of recent improvements in the operation of Cæsarean section, that where the anterior posterior diameter did not exceed 2 inches—the child being presumably of average size—the woman should be recommended to submit to the operation, since her chances were not much worse than with craniotomy. His experience of Cæsarean section was that few points in the operation were of more importance than the thorough stitching of the uterine wound; the muscular walls first, and the peritoneal edges after. He referred to an article in the *American Journal of Obstetrics* for October 1886, where many, in his opinion valuable, improvements in the operation were recorded. He objected strongly to the insertion of a drainage-tube from the uterine cavity into the vagina, believing that this hindered rather than helped the passage of clots.

Mr Nairne, in reply, stated that when he read his paper he had no expectation that it would have a favourable reception. It would be impossible for him to answer in detail all the criticisms that had been passed upon it. He could not admit that any further consultation was required, or should have been held upon the case. The opinions of the leaders of the profession were well known upon the subject. He had dismissed the question of the induction of premature labour, as in her previous miscarriage the difficulty experienced in delivery was very great. He felt disposed to give Mr Skene Keith's advocacy of laparo-elytrotomy a favourable consideration.

CARLISLE MEDICAL SOCIETY.

SESSION III.—MEETING V.

Thursday, 10*th March* 1887.—Dr Maclaren *in the Chair.*

Dr Partridge showed a TUMOUR OF THE RIGHT PAROTID GLAND in an infant three months old. There was no pain or inconvenience.

Dr Lediard showed a case of recovery from TRAUMATIC OSTEOMYELITIS OF THE TIBIA, caused by a kick from a horse. Numerous incisions had been made and the bone scraped.

Dr Trouton showed a boy with CHOREA, in whom there was a CONGENITAL DEFORMITY OF THE LEFT HAND, in which there were only two fingers webbed all the way up. A brother had webbed toes.

Dr Lewis read a paper on DIABETES MELLITUS.

A number of pathological specimens were shown.

MEETING VI.

Thursday, 14*th April* 1887.—Dr Maclaren *in the Chair.*

Dr Maclaren showed a case of COMPOUND FRACTURE OF SKULL, and a SACCHAROMETER removed from the bladder.

Dr Macdougall showed an ADENO-FIBROMA OF BREAST, removed during pregnancy.

Dr Lockie showed TUBERCULAR ULCERS OF INTESTINE WITH PERFORATION.

Dr Lediard showed 218 GALL STONES FROM CASE OF CHOLECYSTOTOMY; CYSTIC DISEASE OF BREAST WITH SMALL ABSCESSES;

and EPITHELIOMA, for which rather more than half the lower jaw was removed.

Dr Douie read a note on a CASE OF LANDRY'S PARALYSIS.

A. B., age 50, a married woman, who had hitherto enjoyed good health, complained of weakness and tingling in the left hand on the morning of 19th March 1886. She had been perfectly well on the previous day, and had slept well. I saw her on the evening of the same day. She was then lying in bed in the dorsal position, with her arms straight out and close to her sides. She was quite unable to move her arms, but could move her hands slightly, the right more readily than the left. She was able to move the lower extremities with considerable force. The facial and tongue movements were normal. Her sensibilities were all normal. On the following day the arms were found to be completely paralyzed. She then began to complain of difficulty in moving the lower limbs.

On the 22nd of March the lower limbs were completely paralyzed, and on that day she lay in bed, literally unable to move hand or foot, but otherwise in perfect health.

On 24th March she complained of difficulty in speaking, the voice was low and whispering, and some moist râles were heard in the chest.

On 25th March the breathing was somewhat hurried, and there was evidently mucus accumulating in the bronchial tubes.

Early in the next morning (26th March) the patient suddenly died, without pain or struggling.

A post-mortem examination could not be obtained. No cause could be assigned for the illness.

There was no rise of temperature throughout the illness. There were no sensory or trophic changes, and no cerebral symptoms. The muscles all responded to the faradic current.

The plantar reflexes were lost coincidently with the loss of power in the lower extremities, as also the knee-jerk.

The abdominal reflexes were present on 25th March.

This case seems closely allied to the acute ascending paralysis of Landry, differing in that the upper extremities in the case described were paralyzed before the lower.

Part Fourth.

PERISCOPE.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

TREATMENT OF ERYTHEMATOUS CONGESTION OF THE HANDS AND CHILBLAINS.—Besnier thus combats the congestive state of the skin, so frequent in the extremities of young lymphatic subjects—a congestive state which causes a bluish aspect, and a sort of hypertrophy of the hands and feet, as soon as the cold weather comes, and predisposes to frostbite, which persists with the most discouraging pertinacity. Besnier recommends for these patients foot and hand baths of a decoction of walnut leaves. Immediately after the bath they are to use frictions with camphorated alcohol, and then powder the parts with the following mixture—

℞	Salicylate of bismuth, . .	5·0
	Amylum, ...	45·0

They should avoid all exposure to excessive cold. At evening, if great itching is present, the friction with camphorated alcohol may be replaced by the following—

℞	Glycerin,	
	Rose water, . . .	āā 25·0 grams.
	Tannin, . . .	05·0 centigrammes.

And the powder used as before. If the chilblains ulcerate, he advises that they be dressed with the walnut leaves which have been used to make the decoction.—L. Broco, in *Journal of Cutaneous and Genito-Urinary Diseases,* January 1887.

Some Rare Forms of Urticaria; Giant Urticaria; Internal Urticaria.—Rapin concludes an interesting paper, based on eighteen cases, many of which are original, as follows:—"Among the various forms of urticaria there is one remarkable from the considerable dimensions of its patches. It has received for that reason the name of giant urticaria. The eruption in giant urticaria may be limited to one or two patches affecting sometimes certain special localities, as the hands, the forehead, the neck. Itchiness, which is regarded in general as inseparable from every urticarial eruption, is sometimes absent. The œdema of neuropathic origin, which constitutes urticaria, scarcely pits, and retains but imperfectly the impression of the finger. The absence of these two characters, itchiness and pitting, the result of pressure, have therefore no absolute value in the diagnosis of urticaria. Urticaria of the scalp shows itself under the form of hard nodules, resembling the rheumatic nodosities, with which they may be confounded. The production or non-production of pain on pressure, the longer or shorter duration of the phenomena, permit, in the absence of other signs, the differentiation of these two affections. Urticaria does not occur solely on the integument. It is often internal, and has for its seat the mucous membrane of the digestive canal, in any part from the mouth to the intestine. The proofs of this localization are furnished us by the swelling of the tongue and the pharynx, the seat of pain in the course of the œsophagus and in the stomach, and finally by the digestive disturbances, eructations, vomiting, diarrhœa. The localization of urticaria in the alimentary canal suffices to explain the anxiety and the dyspnœa. The existence of urticaria of the bronchi does not appear to Rapin to have been proved. [This is interesting in connexion with the recent researches of Prof. T. R. Fraser on dyspnœa.] Urticaria and migraine seem to be related as to their origin, and to belong to the same diathetic stock." Rapin adds, "The supposition of an urticaria of the bronchi does not appear to me tenable, even from a theoretic point of view. In fixing on the pulmonary mucous membrane, urticaria would expose the patient to the danger of asphyxia; its propagation to the glottis would occasion instant death. In point of fact, the prognosis of internal urticaria is not so grave." While Rapin is familiar with what has been written in France on this subject, he only alludes to Kaposi in Germany, and seems entirely ignorant of what Quincke, Laudon, and Strübing have said about it.—*Revue Médicale de la Suisse Romande*, No. 12, 1886.

THE TREATMENT OF NÆVUS BY EXCISION.—While for cutaneous nævi Parker regards fuming nitric acid as the best application, and where the subcutaneous portion forms the sole or chief part of a nævus, when from position, size, or other circumstance excision is contraindicated, electrolysis is the best plan. He advocates excision for subcutaneous and mixed nævi, not only because it is a radical cure, and because a mere linear cicatrix is the only sign that may be left even of a large nævus, but also on the ground that when primary union of the incised tissues is not obtained, a less unsightly scar remains after any other method of treatment. Relapse is by no means unfrequent; thus excision may have to be resorted to after the failure of other plans,—another argument in favour of adopting it *ab initio*.—*Pamphlet.* London: J. E. Adlard: 1886.

CHALK OINTMENT AS AN APPLICATION IN ERYSIPELAS.—Sir Dyce Duckworth recommends an ointment made of equal parts of chalk and lard, with or without the addition of half a drachm of pure carbolic acid to the ounce. Patients express themselves as feeling relieved by this, and prefer it to other applications which may have previously been used. In severe cases it may be necessary to re-apply the ointment twice or oftener every twenty-four hours. He adds, "I once was called to see a case of erysipelas of the face in which white paint had been employed. It caused fearful suffering, was distinctly mischievous, and, worst of all, could not be removed." —*Practitioner*, January 1887.

IMPORTANCE OF THE USE OF THE ABSOLUTE GALVANOMETER IN THE DESTRUCTION OF SUPERFLUOUS HAIRS BY ELECTROLYSIS. —Dr Prince says that the production of scars, however small, in the operation for the removal of superfluous hairs by electrolysis, is due not so much to individual peculiarities of skin, as to the use of currents of too great strength. He draws attention to the great variability in strength of currents from the same number of cells, and this not only in different batteries, but in the same battery under varying conditions. Therefore the common direction to use a certain number of cells in the operation is not definite enough. Nor is it proper to judge of the sufficiency of the current by the occurrence of effervescence about the needle, since this may not show itself in some cases; and further, the hair can be destroyed without the chemical action going so far. A current of one milliampère passing from two to three seconds is the best. The current should never exceed two milliampères. If the hair is not destroyed in that time, it is because the needle has not been accurately introduced. A sponge electrode should not be used, as the water is soon squeezed out of it; and the positive electrode should not be held in the palm, on account of the resistance of the thickened skin, and the unevenness with which the patient presses. To obviate these defects a large electrode covered either with chamois skin, or a thin layer of absorbent cotton, should be fastened to the forearm.—*Boston Medical and Surgical Journal*, 4th November 1886.

SURGICAL PERISCOPE.

By A. G. Miller, F.R.C.S.E.

Prof. S. W. Gross of Philadelphia on Nephro-Lithotomy.—Mr Henry Morris was the first, in 1880, to remove a stone from the otherwise healthy kidney—that is to say, a kidney not distended by pus or urine. By an early resort to nephro-lithotomy the functions of the kidney are not only preserved, but suppurative destruction of the organ is prevented. The procedure is, moreover, comparatively safe—more successful, indeed, than lateral lithotomy in the adult. Thus, of 34 cases of which I have a record, 3, or 8·8 per cent., perished—1 from the effects of morphia, 1 from blocking of the opposite ureter by a calculus, and 1 from pyæmia. If these results be compared with those following the removal of a stone from a disorganized kidney, the contrast will be seen to be most striking, since, of 33 cases of nephrotomy for calculous pyelitis or pyonephrosis, which I have collated, not less than 11, or 33 per cent., died. In the majority of examples of nephro-lithotomy the stone was small. In four instances, however, it weighed respectively 473 grains, 556 grains, two ounces, and two ounces and a quarter; and it is noteworthy that these cases recovered. The most remarkable case on record is that of Clement Lucas, in which, on account of suppression of urine for 102 hours, a calculus was removed from the left kidney of a patient whose right kidney had been extirpated three months and a half previously, on account of calculous hydro-nephrosis. This case shows there is little fear of the operation seriously interfering with the secretion of the urine; and, taken in connexion with the fatal case from blocking of the opposite ureter by a concretion, it demonstrates that the trouble was symmetrical in 2 of the 34 examples in which the operation has been performed. It may also be mentioned that all of the recoveries were perfect, except the first case of Morris, in which a sinus persisted five years subsequently. Under no circumstances should an otherwise healthy kidney be extirpated on account of a stone. The symptoms of renal calculus being present, the organ should be cut down upon and explored with the finger and needle, and by incision, if the other methods fail to detect it. Such a procedure has thus far proved to be perfectly safe, as is shown by 29 cases in which a stone was not found, and which I have collated. All recovered, and in four the organ was cut into. Hence, of 63 examples of attempted or accomplished nephro-lithotomy only 3, or 4·76 per cent., perished, a measure of success which is seldom attained in any other capital operation.

VENOUS BLOOD TUMOURS OF THE CRANIUM.—Dr Mastin, of Mobile, U.S.A., records a series of very interesting cases illustrating this condition (which might be called venous aneurism) from the writings of such men as Percival Pott, Guthrie, Velpean, Stromeyer, etc. Dr Mastin divides them into congenital, spontaneous, and traumatic. In the traumatic cases fracture is the cause, a depressed or detached portion of bone wounding a sinus. A tumour forms, which is capable of being emptied, fills again slowly, may have slight pulsation and bruit, becomes tense on patient stooping forward, when also there may be giddiness. The history of recorded cases shows that these blood cysts do not give rise to much inconvenience or head symptoms. They do not grow to any great size either. They are not very amenable to treatment. Probably electrolysis would be the best treatment.

TRANSPLANTATION BY EXCHANGE. — The *Lancet* for 19th February 1887 contains a most interesting account by Mr C. B. Keetley, Surgeon to the West London Hospital, of what seems to be a new operation, which he calls "transplantation by exchange." The operation was performed on a child with a very large mole on the face, and consisted of the reflection of a flap from the child's arm on to the face and the implantation of the mole on the arm to prevent excessive cicatricial contraction interfering with motion. The flap from the face was left attached by its inferior, that on the arm by its superior, border. The two were then rotated into position and secured then by sutures, the arm having been brought close to the face for that purpose. The child was then enclosed in a plaster of Paris case, so as to keep the arm close to the face and at rest. Both flaps lived, having been severed from their bases on the twelfth day. The child was reported on nine months after the operation, and the result seemed quite satisfactory.

CHARBON CURED BY EXCISION.—In the same Journal, Mr Bryant of Guy's Hospital, publishes seven consecutive cases of charbon or malignant pustule, which he has successfully treated by excision. Considering the invariably fatal result in such cases formerly, this is something worth knowing.

Part Fifth.

MEDICAL NEWS.

Royal College of Physicians, Edinburgh.—The following gentlemen passed their final examination for the degree in Medicine at the sittings held on 5th May 1887, and were admitted L.R.C.P. Ed.:—Albert Ed. Alexr. Pearson, Leeds; Robert Pickering Jefferson, Leeds; Charles Granger Brown, Dudley.

Royal College of Surgeons, Edinburgh.—The following gentlemen passed their final examination at the sittings held in May 1887, and were duly admitted L.R.C.S. Ed.:—John Shaw M'Laren, Edinburgh; Horatio Stanley Nelson, Douglas, Isle of Man.

Royal Colleges of Physicians and Surgeons, Edinburgh, and Faculty of Physicians and Surgeons, Glasgow.—The following gentlemen passed their final examination for the triple qualification in Medicine and Surgery at the sittings held in May 1887, and were admitted L.R.C.P. & S. Ed. and L.F.P. & S. Glasg.:—Thomas Readman, Driffield; Frederick Wilson, Wakefield; William Herbert Hillyer, London; Joseph Silverwood, Huddersfield; Thomas Kensington James Fulton, Edinburgh; Frederick St John Lawrence, Edinburgh; Frank Walter Ellis Coates, Salisbury; George C. Peachey, London; Wm. Ferriday, Manchester; J. E. Mogden, Cardiff; A. J. Lowe, Manchester; Arthur Joe Rollinson, Leeds; J. S. Reynolds, Wexford; Leonard George Peters, Edinburgh; Henry William Grogan, London; Edgar Duesbury Wellburn, Halifax; George Wright Kemp Hector, Edinburgh; John Gower O'Neill, Edinburgh; Charles Fryer, Isle of Wight; William J. Shannon, Long Auckland, Co. Down; Louis Saenger Holmes, Edinburgh; Francis Joseph Kenay, Darjeeling, India; James J. Drinkwater, Llangollen; Timothy John Connolly, Kilmallock, Co. Limerick; Anderson Francis Smith, London; J. R. S. Park, Ashton-on-Lyne; Louis Emile de Boucherville, Edinburgh; F. M. Sykes, Clitheroe; David Thompson, Deans, Ontario; Frank M. Brown, Fredericton, New Brunswick, Canada; Archibald Blythe Thompson, Strathroy, Ontario; João Leixeira, Edinburgh, George T. G. Hughes, Hastings; Henry Gordon Tandy, London; Theodosius Thompson, Belford; Edwin Eranson Jones, Rhyl, North Wales; David Edward Edwards, Edinburgh; Alfred Green, London; Charles Hirks, London; James Richard Lownds, B.A., Newcastle-on-Tyne; Charles Wesley Wilson, Ulverston; David Edward Edwards, Llandovery, S. Wales.

University of Edinburgh.—Medical Degrees Examinations—*Second Professional Examination.*—The following is the official list of candidates who have passed:—R. O. Adamson (with distinction), W. B. Aitken, Richard Arthur, M.A., Benjamin Barnard, J. J. Bennetts, W. A. Betts, J. B. Bird, J. R. Bird, R. D. Booth, R. L. Booth, F. D. Boyd, F. P. Bremner, Reginald Broadbent, D. W. Brown, John Bruce, James Brunton, G. C. Cameron, T. V. Campbell, M.A., F. H. Carlyon, S. W. Carruthers, D. B. Carse, W. J. Cattan, E. J. Cheetham, C. H. T. Chevallier, L. B. Christian, C. S. Clark, M. W. W. Cowan, Alexander Dott, T. W. Eden (with distinction), A. S. Edwards, R. C. Elsworth, R. A. Fleming, M.A., William Fordyce, M.A. (with distinction), J. S. Fox, J. H. R. Garson, A. W. George (with distinction), E. B. Gleaser, H. L. Gordon, George Govan, Curt Grobbelaar, B.A., A. C. Hall, V. B. Harley, F. A. A. Holmden, C. W. Howatson, Sydney Jamieson, C. A. Johnston, D. J. Jones, P. J. Kenna, T. L. Kennish, E. J. Keogh, A. L. Kerr, William Kinnear, M.A., J. T. Kitchin, J. A. Kuhne, B.A., J. H. W. Laing, M.A. (with distinction), A. S. Lawrence, S. M. Lawrence, W. G. Laws, J. A. Lowson, William Lundie, M.A., James M'Donald, J. R. M'Intosh, B.A., D. J. Mackay, Henry Mackay, Frank Mason, Kenneth Maxwell, E. F. Maynard, T. C. Meikle, James Middlemass, M.A., G. V. Miller, J. G. Moffat, J. C. Montgomery, John Montgomery (with distinction), T. H. Morgan, R. H. Morrison, Robert Muir, M.A. (with distinction), B. L. Paton, Julius Petersen, F. G. Phillipo, A. F. R. Platt, Kanta Prasad, J. F. Pridie, J. R. Radcliffe, J. C. Rattray, A. G. Reid, Robert Renton, Richard Richmond, Charles Robertson, R. J. Robertson, J. B. Robinson, Tennent Ronalds, M.A., D. M. M. Ross (with distinction), H. C. N. Sakir, G. S. Samuelson, M. B. Saunders, C. B. Savory, J. F. Scott, W. A. Scott, Ebenezer Shaw, George Shields, J. H. Slayter, J. H. Smith, James Smuts, Wm. Smyth, Edward Stechan, J. F. de Sylva, J. B. Thackwell, J. G. Thomas, David Traill, M.A., N. G. Trotter, D. F. D. Turner, B.A., Herbert Vine (with distinction), J. W. Watterson, W. H. Webster, Wm. Weir, B.Sc., E. N. K. Wells, Andrew Westwood, T. B. White, A. J. Whiting, A. R. A. Wilhelm, A. M. Williamson, H. M. Woodhead, E. A. Woodward, R. E. B. Yelf, C. W. Yeoman, F. S. Zaytoon. *First Professional Examination.*—The following is the official list of candidates who passed:—J. S. Anderson, M.A., F. W. Barton, J. E. A. G. Becker, A. J. Bienemann, F. M. Black, H. D'A. Blumberg, N. T. Bond, E. A. Braithwaite, T. M. Brown, L. C. Bruce, R. D. Buchanan, H. J. M. Buist, W. C. Burns, Percy Capper, E. J. W. Carruthers, Charles Cochrane, C. J. van Coller, S. G. Connor, P. J. De Villiers, R. J. Douglas, G. H. Drury, Alexander Dunbar, E. H. Duncan, M.A., Thomas Edmondson, Henry Edwards, Matthew Elder, Samuel Elliot, A. C. Elliot, D. P. M. Farquharson, E. C. Fischer, Gerald Fitzgerald (with distinction), George Fleming, W. D. Forsyth, J. A. Foulis, John Francis, W. C. Fraser, W. M. D. Gallie, A. Gardner, P. H. Gillies, A. C. E. Gray, William Griffith, W. E. Haworth, C. D. Holmes, G. B. Jameson, J. T. C. Johnson, E. H. Jones, Thomas Knowles, J. J. J. Kotzé, L. G. L. Kvern, E. P. T. von Landsberg, James Lawson-Williams, C. F. Lees (with distinction), T. H. Lewis, William S. M‘Dougall, J. M. M‘Gill, M.A. (with distinction), W. G. Macgregor, Archibald Mackintosh, J. L. Macrae, G. S. Mansfield, A. W. Messer, J. W. Michie, E. A. Mills-Roberts, C. A. Morgan, John Morison, Robert Muir, John Newington, F. J. Nicoll, William Owen, William Paterson (with distinction), E. A. Penfold, George Pernet, G. B. Peiterson, R. J. Pope, B.A., D. R. Price, W. H. Ramsay, J. M. Reid, W. H. Richardson, E. H. Ridley, Alan Robertson, J. A. Robertson, J. H. Robertson, J. D. Robson, M. P. Rodgers, R. M. Ronaldson, R. D. C. Rose, F. W. F. Ross, R. S. Ross, A. F. Rutherford, W. B. Sandes, P. W. Schmidt, C. W. Scott, W. G. Sellar, R. P. Sharman, William Simmers, M.A., J. A. Sinclair, W. C. Smith, John Spurway, W. C. Stevenson, James Sutherland, J. M. Sutter, A. G. Thompson, A. K. Thomson, Peter Thornton, J. M. Walls, L. J. Weatherbe, Evan Williams, G. J. Williams, J. W. Wilson, J. M. Wood, J. B. Young.

PRESENTATION TO MR JOSEPH BELL.

On the 18th ult. an interesting ceremony took place in the Hall of the Royal College of Surgeons, Edinburgh. Subscribers to a Testimonial to Mr Joseph Bell met to present him with his Portrait on the occasion of the close of his term of service as Senior Acting Surgeon to the Edinburgh Royal Infirmary. There was a goodly attendance of practitioners from town and country, as well as of students of medicine. Dr Argyll Robertson, President of the College, occupied the chair.

Dr Littlejohn, as Convener of the Presentation Committee, said,—This is an auspicious occasion. Students, examiners, members of the hospital staff, and college dignitaries, have met here to-day in this hall to do honour to a gentleman, come of a good old stock, whose name is a household word in the history of Surgery in Edinburgh, and who has lately completed his term of service in the Royal Infirmary. That institution has always been singularly fortunate in its working staff, and never more so than at the present moment. Surgeons and physicians of eminence have ever been found ready to devote themselves to the discharge of the onerous and highly responsible duties attaching to their various posts, and it may be truly said, no institution has ever been more faithfully served. For thirty-one years Mr Joseph Bell was connected with the Royal Infirmary, entering as dresser in 1856, and leaving as senior surgeon last year. Mr Bell's whole career has been distinguished by the most honourable attention to his duties, whether as a teacher of systematic surgery in the Medical School, or as a teacher of clinical surgery in the Infirmary, whether as regards the patients committed to his charge, the nurses on his staff, or the students who thronged his class-room and wards. An accomplished and dexterous surgeon, he secured the confidence of his patients and the public. His teaching powers were freely devoted to the nursing establishment of the Infirmary, while to the students he endeared himself by the practical character of his teaching and his frank and sympathizing manner.

It was the students, Mr Chairman, who spontaneously inaugurated the movement to present their teacher with some token of remembrance and esteem. Mr Bell's numerous friends in the city and throughout the kingdom willingly availed themselves of the opportunity to join, and ultimately it was determined to request Mr Bell to sit for his portrait, which is now before us. The occasion of this meeting is doubly gratifying—gratifying in the highest degree to Mr Bell, and gratifying to the subscribers, whether friends, or former pupils who are now privileged to claim him as their friend as well as their teacher. We are met here, Mr Chairman, not so much to gratify our respect for a talented surgeon, as to express the pleasure we have enjoyed in Mr Bell's friendship, and specially from his urbanity and unvarying kindness of head and heart. Two persons who would have been deeply interested in our proceedings are absent from us to-day, but whose presence, had that been possible, would have been welcomed by us all. Need I mention the respected father of Mr Bell, Mr Benjamin Bell, formerly President of this College, and who ever evinced a deep concern in all relating to the highest interests of the students of the Edinburgh Medical School. A gentleman of great modesty, his portrait unfortunately does not deck the College walls; he was always proud of his son and of the distinctions he gained. The other looks down on us in the familiar features of Mr Syme, whose pupil Mr Joseph Bell was, and whose doctrines he was ever loyal in teaching. Mr Syme was, as is well known, one of the ornaments of our profession, and he was ever always deeply gratified by the successful career of those whom he taught—but it cannot be, and it is left to us to discharge the grateful duty. The Committee on the present occasion have felt themselves honoured by the presence of one of Mr Bell's personal friends and late colleagues, who occupies so worthily the chair of this ancient College. Dr Argyll Robertson has consented to make the presentation of the picture, but before doing so I shall call on Mr Fleming, as representing the student subscribers, to say a few words.

Mr **Fleming** said,—I can testify, on behalf of the student subscribers, how much we all valued and appreciated Mr Bell's talents both as a surgeon and as a teacher in the lecture theatre and at the bed-side. I do not suppose there ever was or ever will be a surgeon or a teacher who at one and the same time could be every student's *beau ideal*, but no one came nearer that *summum bonum* than Mr Bell; and perhaps there is no more severe and more exacting critic than the Edinburgh medical student of to-day. Mr Bell is a brilliant operator and an able diagnoser, and these qualities, being combined with a friendly and constant interest in the students, will ever keep his memory as one of the pleasantest of these days. There is only one thing we regret, and that is, that the testimonial was started at a time when many of Mr Bell's old students were away from Edinburgh, and who would have been only too glad to testify their regard for him had the opportunity been offered to them. I beg, in the name of the medical students, to offer to Mr Bell their share in the testimony to his high merit as a surgeon and as a lecturer in clinical surgery when on the acting staff of the Edinburgh Royal Infirmary.

The portrait having been unveiled,

The **Chairman**, addressing Mr Bell, said,—I have great pleasure, on the part of the subscribers, to beg your acceptance of this portrait as a token of the sincere regard and esteem that is entertained for you, not merely by your professional brethren, but by a large body of students who have profited by your admirable instruction. I may also be permitted to express the hope—a hope I am sure that is shared by all present—that you may be long spared to employ for the benefit of suffering humanity those brilliant talents whereby you have achieved for yourself so high a position among Edinburgh surgeons. There is appended to the portrait the following inscription:—"Presented to Joseph Bell, Esq., M.D., F.R.C.S.E., on the termination of his appointment as Surgeon to the Edinburgh Royal Infirmary, by numerous Students of the School of Medicine, and by many professional friends in town and country—1887. James Irvine, *pinxit.*" I also beg to hand you a list of the subscribers.

Mr **Bell**, replying, said,—Mr Chairman and gentlemen, I have many a time had to face an audience during the last thirty years, but I never faced one before with so much feeling both of unworthiness and incompetency. I say unworthiness, because no one knows so well as myself how unworthy I am of the kindness you have invariably launched upon me during the term of my office; and incompetency, because I feel almost unable to get words to express the great gratitude I owe for the present, which I trust will always be kept by my family as an heirloom, and be regarded as the greatest honour that has come to my house. In the course of his remarks, Mr Bell noticed, as gratifying features of the occasion, the presence of Dr Argyll Robertson, his old friend and fellow-student; Dr Littlejohn, Dr Gillespie, and Professor Chiene, of each of whom he spoke in terms of respect and esteem. He said, moreover, that he always loved and respected the Edinburgh medical students. They were said to be wild and difficult to keep in order; his experience was quite the opposite.

Dr **Littlejohn** moved a vote of thanks to Dr Blair Cunynghame, treasurer, and Dr Scott Lang, secretary, "for the successful manner in which they had brought out the testimonial." The motion was declared unanimously carried. Votes of thanks were also accorded to the Royal College of Surgeons for the use of the hall on the motion of Dr Troup, and to the Chairman on the motion of Dr Keiller.

Edinburgh University General Council—Election of Assessor.—The result of the voting for an Assessor to represent the General Council in the Edinburgh University Court, in room of the late Dr Rutherford Haldane, was declared on 11th May. The candidates nominated were Dr Heron Watson and Sir Alexander Christison. For the former 1832 votes were given, and for the latter 1245—majority for Dr Heron Watson, 587. During the counting of the votes, Dr Heron Watson was represented by Mr J. C. Lorimer, advocate, and Mr D. D. Buchan, S.S.C.; and Sir Alexander Christison by Professor T. R. Fraser and Mr R. Bruce Johnstone, W.S. The following is the summation of the votes in the election:—Number of members on the register, 5644; members who, as appearing from their addresses on the register, are not resident in the United Kingdom, and to whom voting papers were not issued, 527; number to whom voting papers were issued, 5117; voted for Sir Alexander Christison, 1245; voted for Dr Heron Watson, 1832; voting papers returned through Dead Letter Office, 226; informal votes, 9; did not vote, 1805—majority for Dr Heron Watson, 587. Voting letters delivered too late, 15.

The Director-General of the Army Medical Department has announced that there will not be any examinations for Commissions in the Medical Staff of the Army during the month of August next.

Mr A. de St Dalmas, whose Belladonna and other plasters are advertised in this Journal, has received an intimation from the Director of Navy Contracts that his tender for the supply of spread plasters for four years has been accepted.

PUBLICATIONS RECEIVED.

T. M'Call Anderson, M.D.,—A Treatise on Diseases of the Skin. Charles Griffin & Co., Lond., 1887.

Dr **G. Apostoli**,—Nouveau Traitement de la Métrite Chronique. Octave Doin, Paris, 1887.

Robert Bentley, M.R.C.S. Eng., etc.,—Text-Book of Organic Materia Medica. Longmans, Green, & Co., Lond., 1887.

Paul Berger,—L'amputation du membre supérieur dans la contiguité du tronc. G. Masson, Paris, 1887.

Bibliographie des Sciences Médicales. J. B. Baillière et Fils, Paris, 1887.

T. Lauder Brunton, M.D., etc.,—Text-Book of Pharmacology, Therapeutics, and Materia Medica. Macmillan & Co., Lond., 1887.

Alfred Carpenter, M.D.,—The Principles and Practice of School Hygiene. London, Joseph Hughes, 1887.

W. H. Corfield, M.A., M.D.,—The Treatment and Utilization of Sewage. Macmillan & Co., Lond., 1887.

Edgar M. Crookshank, M.B.,—Photography of Bacteria. H. K. Lewis, Lond., 1887.

D. J. Cunningham, M.D.,—The Dissector's Guide. Maclachlan & Stewart, Edin., 1887.

Sir W. B. Dalby, F.R.C.S.,—Short Contributions to Aural Surgery. J. & A. Churchill, Lond., 1887.

J. Milner Fothergill, M.D.,—The Practitioner's Handbook of Treatment. Macmillan & Co., Lond., 1887.

J. Milner Fothergill, M.D.,—Indigestion and Biliousness. H. K. Lewis, Lond., 1887.

A. S. Gubb, L.R.C.P., etc.,—Griffiths' Materia Medica and Pharmacy. Baillière, Tindall, & Cox, Lond., 1887.

Richard Harris,—Before Trial: What should be done by Client, Solicitor, and Counsel. Waterlow Bros. & Layton, Lond., 1886.

Thomas Harris, M.D.,—Post-Mortem Handbook. Smith, Elder, & Co., Lond., 1887.

Alex. Harvey, M.D., and Alex. D. Davidson, M.D.,—Syllabus of Materia Medica. H. K. Lewis, Lond., 1887.

Carl Heitzmann, M.D.,—Anatomy, Descriptive and Topographical. Dulau & Co., Lond., 1887.

B. Hill, M.B.,—The Essentials of Bandaging. H. K. Lewis, Lond., 1887.

Dr Oscar Jennings,—De la Morphinomanie. J. B. Baillière et Fils, Paris, 1887.

A. Johnstone, F.G.S.,—Botany Notes, Parts 1, 2. E. & S. Livingstone, Edin., 1887.

Surgeon-Major D. F. Keegan, M.D.,—Litholapaxy in Male Children and Male Adults. J. & A. Churchill, Lond., 1887.

Dr Edwin Klebs,—Die Allgemeine Pathologie oder die Lehre von den Ursachen und dem Wesen der Krankheitsprocesse. Gustav Fischer, Jena, 1887.

J. Kraus, M.D.,—Carlsbad: its Thermal Springs and Baths. Trübner & Co., Lond., 1887.

Dr W. Loewenthal,—L'Enseignement actuel de l'Hygiène dans les Facultés de Médecine en Europe. H. le Soudier, Paris, 1887.

Dr Lutand,—M. Pasteur et la rage. Paris, 1887.

P. H. Maclaren, M.D., F.R.C.S.E.,—Atlas of Venereal Diseases. Young J. Pentland, Edin., 1887.

John Marshall, F.R.S., etc.,—Neurectasy. Smith, Elder, & Co., Lond., 1887.

J. L. Milton,—Pathology and Treatment of Spermatorrhœa. Henry Renshaw, Lond., 1887.

Angel Money, M.D., M.R.C.P.,—Treatment of Disease in Children. H. K. Lewis, Lond., 1887.

Prince A. Morrow, A.M., M.D.,—Drug Eruptions. Wm. Wood & Co., New York, 1887.

James Morton, M.D., etc.,—Treatment of Spina Bifida by a New Method. J. & A. Churchill, Lond., 1887.

Walter Moxon, M.D.,—Pilocereus Senilis. Sampson Low & Co., Lond., 1887.

New Sydenham Society's Lexicon. Part 13. Lond., 1886.

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